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December 25th.

Vice President Bridges in the Chair.

The Committees, to which were referred papers read by Major Le Conte, Dec. 4th; by Mr. Cassin, Dec. 18th; by Mr. Conrad, same date; by Major Le Conte, same date; and by Dr. Leidy, same date, reported in favor of publication in the Proceedings:

Descriptive Catalogue of the Ranina of the United States.

By John Le Conte.

On account of the numerous errors which have been introduced into that part of the Herpetology of our country, which treats of the frogs and allied animals, I have been induced in this short memoir, to reduce such as I have been able to obtain, to some better order. I offer but a descriptive catalogue. To this are joined all the synonyms which I have been able to collect from works which could be consulted in this city.

Before I begin, it is necessary to observe that all the Ranina which I have ever seen, have more or less the power of changing color at will. The character of color therefore, of so much moment in the description of many other animals, is here of very little value; for none of the marks dependant on it are constant. In consequence, it requires numerous specimens, living subjects and long study to produce any description that approaches perfection.

How far I have succeeded in my attempt remains to be seen. I have been long and sedulously engaged in my researches. Every description has been made from living specimens. The many strange errors and misnomers pointed out will perhaps appear at first sight extraordinary and not worthy of belief; but it is to be hoped that the reasoning which has led me to differ so much from others, will produce the same effect upon the minds of my readers as it has upon mine.

Rana Catesbiana. Shaw, gen. zool. vol. iii. pl. 33 ann. 1802. R. mugiens Merrem. p. 175 ann. 1820. R. pipiens Holbrook iv. p. 77 et aliorum. R. scapularis Harlan, Journ. Acad. Nat. Sci. vol. v. p. 335. Catesby Carolina vol. ii. tab. 72. Vulg. Bull frog and Blood and Owns.

Add to the descriptions already given, a short raised line runs from the back of the orbit, to the tympanum and is curved down behind it. Body above finely granulate, more distinctly at the base of the jaws. Color above olive green and olive brown of every shade, irregularly spotted and blotched with dusky, or uniform brownish dusky without any visible variegation except on the fore part of the head, where there is in all an inclination to green; in some few the whole body above is green. A deep depression under the nostrils. Beneath white or yellowish white, sometimes without spots or spotted with dusky only on the chin, sometimes spotted or blotched all over, or again dusky or black spotted and varied with white.

Length from nose to the tip of the toes 20 inches.

Inhabits from one end of the country to the other.

R. nigrescens Agassiz. Agas. Lake Superior p. 879.

Above very rough with numerous warts, dusky, blackish brown or dark brown, more or less distincly spotted with darker, the spots frequently angular; a longitudinal cutaneous fold runs on each side of the back from the orbits to the vent. Body beneath punctate, whitish, very much varied on the chin with black, sides slightly spotted with white: the under and hind part of the thighs spotted or sometimes varied with black, the under side of the tibiæ and feet are likewise yellowish with some few spots of black.

Length 2.5 in., arm 1.9 in., leg 3.9.

Inhabits Lake Superior, particularly on the north side.

This species has by some been considered as a variety of the R. fontinalis, to which species it bears only a remote resemblance. The illustrious naturalist to whom we owe the first description of this animal was not so ignorant as to confound the two together.

R. FONTINALIS. R. fontinalis L. C., Annals of Lyceum N. Y. vol. i. p. 282. R. clamata Dumeril and Bibron vol. viii. p. 373. R. flavo-viridis and clamata Harlan l. c. p. 338. R. Horiconensis Holbrook l. c. p. 85. R. fontinalis ejusdem ibid. p. 87.

A glandulous raised line always extends from the orbit to the sacral prominence. The color varies, being ashy grey, greyish or blackish brown, olive, yellowish green, rarely brown with a bronze reflection, sometimes without spots, most frequently spotted with dark brown or dusky, particularly on the sides, which are always lighter colored than the back. Beneath white or white spotted or varied with dusky or brown.

Inhabits the Northern States in springs or rivulets of cold water. In the southern parts of our country the water is doubtless too warm for its existence.

R. PIPIENS. R. pipiens Gmel. Lin. i. p. 1052. Ead. Bonaterre Encyc. method. pl. iv. figs. 2 and 3. R. halicena Daudin Hist. Rain. p. 63. Eadem Holbrook l. c. p. 91 et aliorum. R. melanotus Raf. R. utricularia Harlan, l. c. p. 337.

Above smooth, with some scattered warts or small tubercles either round or oblong, sometimes uniting so as to form four raised lines the anterior abbreviated both before and behind, the posterior only before, but both tubercles and lines depending for their appearance on the will of the animal. Behind the eyes are sometimes observed some large punctures. Color green, brownish green, brown of various degrees of intensity, reddish and dusky, varying to all these at the will of the animal; when brown they have frequently a metallic gloss. The upper lip and tympanum are often golden. When found in a state of torpidity they are frequently almost black. There is a raised whitish line extending from under the eye to the insertion of the fore leg, and we never fail to find a raised cutaneous fold or line of white or yellowish extending from the orbit to the hind part of the body; this together with the spots on the sides and back, form the proper characteristics of this species, yet I have one before me that has but five spots on the back, three on one side and two on the other with none on the sides. The lower part of the sides of this near the groin are bluish. This species has a vocal vesicle on the side of each jaw like the R. esculenta.

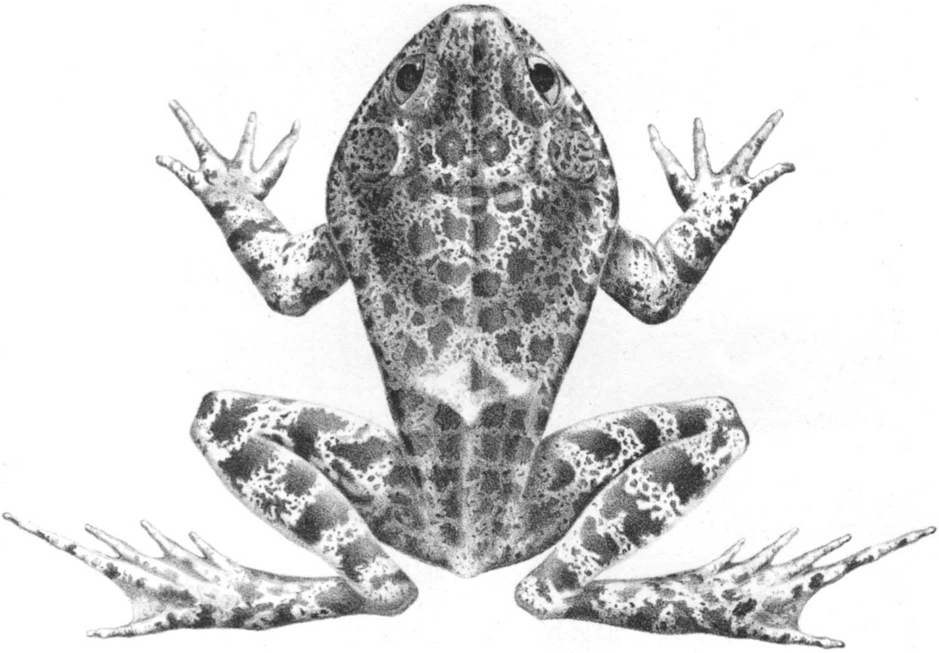
I have restored to this species its original name of *pipiens*. Kalm has some how or other the credit of giving to it the name of *halecina*, upon what authority I cannot find, neither can I see how the name fits. The word *halec* in Latin signified a kind of sauce apparently like that we now call anchovy sauce. Afterwards it came to mean any kind of small and cheap fish, by no means however either herring or shad, both of which must have been unknown to the Romans before the conquest of Gaul. How the name was taken from this species and given to the bull frog it would be difficult to discover. No one who knew any thing of the two animals, would confound the soft peeping sound of a chicken with the loud roaring of a bull.

R. PALUSTRIS. R. palustris L. C., l. c. p. 282. Eadem Holbrook l. c. p. 95. R. pardalis Harlan. Silliman's Journal x. p. 60.

The hind part of the thighs is always yellow spotted with black. It is remarkable for its strong and disagreeable odor. Much resembles the preceding, but is distinguished at once by the two raised lines on the back being wanting; these never fail in the R. pipiens. It sometimes has the black spots on the top of the back connected into two longitudinal bands.

R. CLAMATOR. R clamata Daudin l. c. p. 54. R. clamitans Merrem. p. 176.

Above smooth, with a few scattered warts, dark olive, cinereous or dark green, with a few irregular black spots, and frequently with a darker line extending from the orbits to the insertion of the hind legs. Beneath smooth white, more or less varied with dusky. Upper eyelid smooth, tympan brown, vomerian teeth small, the two clusters nearly joined together. Arms and legs barred with dusky, fingers a little dilated at the tips, the first equal to or longer than the second and



RANA CAPITO, Le Conte

On Stone by Wm. E. Hitchcock

Lith. of J. T. Bowen, Phil.

perfectly free, that is to say without any web; between the second and third and third and fourth, there is a slight appearance of palmation or a webbed membrane. The webs of the toes do not reach to their points: the second toe is one third longer than any of the others, and is naked for a greater length.

Length 1.8 in., arms 1.1 in., legs 2.65 in.

This is the true R. clamator of Bosc, (not clamata which is a misreading of Mr. Bosc's name); this name has been given by Dr. Holbrook to a species which I have never seen.

R. CONSPERSA.

Head punctured and wrinkled in a dædal manner. Body above smooth or warty at the will of the animal, sometimes these warts being so arranged as to resemble a cutaneous fold on the sides of the back. Beneath white, shagreened or very finely granulate. Color above green or greenish cinereous, or cinereous sometimes varied on the greener jaws and on the sides with white. Top of the back with an infinity of small dots of paler, and marked with numerous small, round, irregularly scattered spots of dusky, which are however sometimes nearly evanescent. Chin and throat frequently tesselate with dusky. Arms brownish spotted with dusky. Legs above brownish, varied with darker; hind part of the thighs warty, dirty white varied with dark brown, or pale brown varied with darker, beneath spotted with brown, tibia above a little warty, almost always with a few transverse bars of darker, beneath pale brown, third and fourth toes much longer in proportion than in other species, toes not dilated at the tips.

Length 1.8 in., arm and hand 1 in., leg 3 in., thigh 1.6 in., tibia and foot .94, tympanum .15.

Inhabits Pennsylvania in ponds and ditches.

Individuals are found which at times have the warts on the back arranged in such a manner as to simulate a cutaneous fold; beneath this there is sometimes likewise a short line of the same kind.

A young one of this species which I kept for a long time in a glass jar along with many others, was able to climb up the vessel in which he was imprisoned and to support himself there as well as a Hyla would have been able to do.

It has been thought by some that this was nothing more than a young bull-frog. But I have them not an inch in length, when the larva of the bull-frog before it loses its tail is frequently three inches long in the body.

R. SYLVATICA. R. sylvatica L. C. l. c. Ead. Harlan & Pennsylvanica ejusd, l. c. 330.

This species has sometimes the dark bar on the head scarcely distinguishable, in others it is entirely wanting; it resembles the Rana temporaria of Europe very much, and requires a rigid examination to determine that it is not the same. It does not inhabit the Southern States at least in the lower country.

R. CAPITO.

Above very rough, dark grey or slate-color speckled with black with six rows of roundish spots on the back; sides speckled and irregularly marked with spots of the same form and color; from the orbits to beyond the middle of the body runs a broad raised line or cutaneous fold; and another from the corner of the mouth to the insertion of the arm. Beneath smooth, yellowish white, speckled, spotted and varied with dusky; top of the head coarsely punctured, back and sides tuberculous. Head very large, broad and blunt, a deep concavity between the nostrils and the eyes. Irids golden mixed with black. Tympanum of the color of the body. Lower jaw with a small protuberance or point resembling a tooth. Arms and legs above grey, speckled and barred with black; beneath yellowish spotted and varied with dusky, the yellowish color more decided at the axillæ and groins. Hind part of the thighs granulate. Fingers slightly palmate at the base, the first longer than the second. The second toe twice as long as the first.

Length 4·2 in., width of the head at the corners of the mouth 1·5 in., arm 1·87, leg 4·75, thigh 1·1 in., tibia 1·45, foot 2 2.

Inhabits Georgia in the ditches of the rice-fields. (Plate V.)

TELMATOBIUS Wiegmann.

T. LENTIGINOSUS. Bufo lentiginosus, Shaw's Zool. iii. p. 173 pl. 3. Catesby ii pl. 69.

Above more or less granulate with small scattered warts, cinereous or dark slate color, speckled all over with whitish or pale brownish grey, and with brown or dusky; beneath whitish, spotted and varied with dusky, particularly on the throat and under side of the legs. Head small, vertex plane; irids golden; tympanum small, scarcely visible from its color. Arms of the color of of the body, spotted more especially behind, fingers slightly webbed, the first much shorter than the second. Legs obscurely barred with darker, feet fully palmate.

Length 2·25, width of head ·7, length of the same arm 1·5, leg 3·44, thigh ·9, tibia 1·04, foot 1·5.

Inhabits Georgia.

This animal, with considerable resemblance to a toad, is nevertheless a perfect frog. It wants the vomerine teeth which are always found in the genus Rana. Whether the fact of its wanting the small and imperfect vomerine teeth should make us consider the Telmatobius as distinct from Rana, is a question I shall not take upon me here to decide; it is enough to say, that the present eagerness for the erection of new genera is fast degrading Natural Science into a system of empirical uncertainty. Of its mode of life I know nothing; it was found on a road bordered on each side by a deep ditch. Mr. Catesby, who has an excellent figure of it, calls it the land frog.

ACRIS Dumeril.

A. GRYLLUS. A. gryllus L. C. Ann. Lyc. N. Y. i. p. 282. Dumeril & Bibron l. c. p. 507 pl. 33.

Body above more or less papillous, some of the papillæ joined together so as to form narrow oblong abbreviated lines. Chin and throat smooth, abdomen and inner and hind part of the thighs, cancellately reticulate. The color above is dark brown, brownish dusky, reddish brown, cinereous or dull green with sometimes some very indistict spots of darker or of dusky. The triangular spot on the vertex is often evanescent as is likewise the vertebral line of paler, or green or reddish. The white line bounding the black spot from the orbits is frequently wanting as is also the spot itself, as well as the one from the arm along the side. Upper lip with sometimes three white perpendicular bars. Throat and breast often varied with dusky. Tympanum rather indistinct. In one specimen the color was brown with a golden gloss.

Length 1·4, head ·45, arm ·8, leg 2·8 in., thigh ·75, tibia ·85, foot 1·2 in.

Found in immense numbers in every piece of water in the Southern States, and *was* a few years ago commonly known by the name of Savannah Cricket.

A. CREPITANS. A. crepitans Baird Proc. Acad. N. S. vol. vii. p. 59. Hylodes gryllus Holbrook l. c. plate 33, and Dekay N. H. N. Y. p. 22 No. 51.

Body above with small warts of different forms and irregular disposition, which are frequently of a yellowish brown color. Color above obscure green or olivaceous, dotted all over with extremely minute points of black, a short oblong and oblique dark brown or black spot, often with a white line below it, proceeds from the orbit to the insertion of the arm, another of the same oblong form and oblique direction formed from the juxtaposition of very small specks of black, runs from near the axilla half way down the side, and a third one farther behind reaches almost to the groin, all these however vary in form, and the third one is frequently evanescent. Lips generally whitish spotted with black, chin and throat granulate sometimes yellow, most frequently white and often speckled with dusky, top of the nose with transverse wrinkles, tympanum small and indistinct, of the color of the body. Body beneath white, with a fold on the breast between the arms. Abdomen rugoso-granulate, punctate. Legs beneath grey, thighs on the under and hinder parts granulate with white, one of the granules on each side of the anus larger and very conspicuous, above these is an angular darker spot. Arms and legs barred or spotted with darker or dusky, thighs with one or two darker spots, tibia a little varied in the same manner. Very much resembles the preceding but the head is shorter and blunter, the body likewise is not as slender or as graceful in form as in A. gryllus, having a considerable resemblance to a toad. Varies extremely in color and in other marks. The only unvarying marks which I have been able to discover are the warts on the back, the dusky line from the axilla on the side (which sometimes almost vanishes) the darker angular spot above the anus (which at times is scarcely perceptible) and the white granules on the hinder and under parts of the thighs. They are found of a green color with a reddish line along the middle of the back, and olivaceous with a red or green vertebral line, in the majority of specimens however this line is entirely wanting. In some the warts on the back are few in number, and the lower ones on each side coalesce into a line resembling a cutaneous fold. In others a few dark spots of greater or less size are seen on the back, and there is on the head a large triangular spot of dusky, the base of which is placed between the orbits, the apex pointing backwards often to be only traced by three narrow lines forming a triangle frequently reduced to one transverse bar, and again being sometimes entirely wanting. There are likewise in some a few large oblong spots of cinereous dusky on the back, which are so placed as to form a recurved vitta on each side of the vertebral column, they are however sometimes not joined together and then may be said to be scattered irregularly. The upper lip is sometimes white varied with black, sometimes entirely white, of which color is also the lower lip, almost always dotted with black. The black spot from the orbit to the arm is often wanting and its place occupied by the enlarged inferior white line. In many individuals the spot from the axilla is the only one visible on the side. The fingers in all are slightly bullated at the extremity, which gives it the faculty of supporting itself on smooth perpendicular surfaces.

Whether all the variations above mentioned are permanent in the individuals where they have been observed, or depend upon the will of the animal, I have not been able to determine precisely. In many instances however, they are the voluntary changes which for some unknown reasons this creature chooses to make in its appearance.

Length 1·2 in., head ·3, arm ·6, leg 1·7, thigh ·4, tibia ·5, foot ·6.

Inhabits the Northern and Middle States.

CHOROPHILUS Baird.

C. NIGRITA. Rana nigrita L. C. l. c. Cystignathus nigritus Holbrook l c. pl. 26. Acris nigrita Dumeril, l. c. p. 509.

Body elongated rather narrow, above with numerous small warts. Color above dark slate, with more or less of oblong, oval or round sometimes very numerous black spots, which often form stripes. Upper lip white, which color often extends to the insertion of the arm. Irids golden. Tympanum distinct, black or of the color of the body. A broad black band extends from the nose through the eyes and along the sides to beyond the middle of the body. Beneath whitish, sometimes tinged with yellow with a few black spots irregularly assembled in groups, cancellately reticulate (in dead specimens appearing granulate) arms and legs spotted and barred with black; thighs and tibiæ granulated, more or less covered with small warts. A very slight scarcely perceptible web between the second and third and between the third and fourth toes, the fourth and fifth are closely united at the base. Fingers and toes with small dilations at their tips. Chin often dusky.

Inhabits Georgia and S. Carolina in ditches and ponds.

This species has been placed by Dr. Holbrook in the genus Cystignathus, to which it cannot possibly be referred, as it has the vocal vesicle under the chin and not at the corners of the mouth. M. Dumeril has called it an Acris. That genus has the toes properly and strongly webbed.

C. ORNATUS. Cystignathus ornatus Holbrook l. c. pl. 25.

Body short and broad. Above smooth, pale brown or dove or slate color, with numerous specks of black. Lips whitish, yellowish or flesh color. Irids golden. Tympanum small, black, distinct. Top of the head with a large, irregular, triangular, dusky spot, the base of which lies between the eyes, and the apex points backward, this with a long stripe of the same color on each side of the vertebral column is sometimes very distinct, at others not visible. A black vitta extends from the point of the nose through the eye and tympanum to near the insertion of the arm, and is sometimes continued on until it joins another which runs along the sides to the middle of the body; there are one or two spots of the same color towards the hind part of the body, frequently however wanting; when present all these black marks are bordered by yellow or white. Beneath except on the throat cancellately reticulate, white or yellowish with numerous black specks assembled in irregular groups. Legs above with transverse bands of darker or dusky, thighs behind granulate and often spotted with yellow; there is generally a black spot on the outer part of the shoulder. The tongue in this species is much rounder than in the preceding, it is also more slightly emarginate and less narrowed at the base.

Length 1.3 in., leg 1.8, tibia and foot 1.2.

Inhabits Georgia, very common in the pine barren ponds.

HYLA.

H. VERSICOLOR. H. versicolor L. C. l. c. Tree frog of Pennant Arct. Zool. ii. Supl. p. 81. Dendrohyas versicolor Wagler.

Body very broad and blunt, above covered with small warts; beneath every where granulate, the granules on the throat and chin are so small, that these parts appear almost smooth, tibia beneath reticulate. The color above varies at will from pale brown to different shades of ash and to green, with a few irregular spots or blotches, variable both in color and in form, which at times are so arranged as to assume the appearance of an oblique angled cross; there are also numerous specks of black on different parts of the body. Beneath the color is white, the inner and hinder sides of the thighs are of a deep yellow or orange color, the under side with that of the tibia deep flesh color, both of them reticulate with black.

Inhabits from New York to the lower and warmer parts of Georgia, where however it is very rare.

This animal is the analogue of the Hyla arborea of Europe.

H. LATERALIS. Cinereous frog, Penn. l. c. p. 82. H. lateralis Daudin. Rana bilineata Shaw iii. p. 136. Hyla or Calamita lateralis aliorum. Hyla viridis Holbrook l. c. pl. 29. Variety of Hyla viridis of Europe Laurenti, Synop. Rept. p. 33.

Body rather narrow and elongated. Varies in being above of various shades of green sometimes nearly black, the green color however being by far the most common, the other marks are constant. The line on the sides is either yellow or silvery. In the spring it is found in rice-fields in astonishing quantities. Is commonly known by the name of the bell-frog, its notes resembling the sound of small bells. It is frequently called the *fried bacon* frog, as its voice seems to some ears to repeat those words. Laurenti considers it as a variety of Hyla arborea which he calls viridis, although it had borne the former name for many years before he wrote his synopsis. Our American animal has but little resemblance to the European, especially in form.

H. FEMORALIS. Daudin, l. c. p. 19. Calamita femoralis, Merrem. p. 171. No. 11. Auletris femoralis, Wagl. p. 201.

The darker marks on the head and back are sometimes evanescent, but the yellow spots on the hind part of the thighs are always more or less distinctly visible. The chin is cancellately reticulate, sometimes speckled with dusky sometimes altogether of that color. The color of the body above varies at the will of the animal.

It is wrong in Dumeril and Bibron to say that this species is a variety of H. squirella. In shape and size the difference is most considerable. The latter animal during the warm season is always to be met with about houses, the H. femoralis never. Besides, their notes are entirely different.

H. SQUIRELLA. H. squirella Daudin, l. c. p. 18. Calamita squirella Merrem. p. 171, No. 13. Auletris squirella Wagl. p. 201.

Color varying at the will of the animal from green to brown of different degrees of intensity, spotted and speckled irregularly with darker or dusky and sometimes with paler, often however of a uniform color. A darker line extends from the nostrils to the eyes and through them to the insertion of the arm (this is sometimes evanescent) ; beneath this darker line extends a white one which reaches nearly to the groin ; sometimes interrupted or broken into three or four parts. The dark line on the vertex between the eyes never fails entirely, although it is sometimes reduced to a rather large spot on each eyelid. Toes not so much palmate as in the preceding species.

H. DELITESCENS. H. delitescens L. C. l. c. p. 181. Holbrook, l. c. pl. 32.

Variable at will from cinereous to brown, more or less distinctly spotted with darker. Differs especially from the former in having a larger and blunter head. The exterior portion of the thighs and the whole of the under side of the arms and legs is yellow, the legs also are not barred, but varied and speckled with darker, chin and throat smooth. Toes as in the preceding species.

Inhabits Georgia. In the spring it is found very numerous under the bark of dead trees.

H. PICKERINGII. Hylodes Pickeringi Holbrook, l. c. pl. 34.

Above smooth, light-brown or fawn-color with lines and spots or specks of dusky, the first of these most frequently arranged so as to form an oblique angled cross, a line of the same color on the top of the head forming an angle pointing backwards, and another extending from the nose to the insertion of the arm, this last sometimes not apparent, indeed all the dusky marks are frequently so indistinct as to be scarcely observable, beneath whitish granulate, arms and legs marked with transverse bars of darker or dusky.

This is a true Hyla and not an Hylodes; it is never found in the water, but on the leaves of plants and under the bark of dead trees.

H. OCULARIS. H. ocularis Daudin, l. c. p. 32. Hylodes ocularis Holbrook, pl. 35.

Above brown or bronzed or silvery grey, very finely speckled with dusky or darker, a tolerably wide band of black proceeds from the tip of the nose to the middle or beyond the middle of the sides, this is bordered beneath with white. Chin and under side of the thighs speckled with black. Legs speckled like the back and more or less spotted and barred with dusky, fingers and toes all furnished with small disks.

Length .6.

Inhabits Georgia. The smallest of all known Ranina. From the small size of this and the preceding species, the web between the third and fourth toes is not very perceptible.

SCAPHIOPUS Holbrook.

S. SOLITARIUS Holbrook, iv. pl. 27.

Above olive brown, dusky, of various shades, with blotches of darker or black, and two lines of pale yellow or whitish from the orbits to the vent, and sometimes another of the same color on the sides; tympanum small, pale olive. Back warty, the warts of different sizes and colors, some of them dark brown or dusky, others orange colored or red.

This curious animal so much resembling a frog in its maxillary and palatine teeth, and a toad in its parotids, the form of its body and its subterranean life, gives a fair example of some of our systematic arrangements. It has been placed by M. Dumeril among the frogs, when to all intents and purposes it is as much a toad as any of the genus Bufo. The flat spur, as it has been called, at the root of the first toe on the internal margin of the metatarsus, is nothing more than a much developed form of a scale or disk occupying the same situation in most animals of this family.

Although very seldom seen except when accidentally turned up by the spade or the plough, yet the Scaphiopus is a very common animal in Georgia. Whenever the South East storms occur at the Autumnal Equinox, the surface of the earth is covered with them, and their dismal croakings add to the horror of the howling winds and the deluges of water which pour down from the heavens.

They have also been found in Connecticut and Massachusetts. When placed upon the ground they dig with remarkable celerity, and soon entirely bury themselves in the earth.

BUFO.

B. MUSICUS Daudin l. c. p. 92, pl 32. B. lentiginosus Holbrook v. pl. i.

This species like all its congeners varies very much in color and in the form and disposition of the spots. This variation depends entirely on the will of the animal. It is generally however of a very dark dusky, sometimes light grey and even reddish. I cannot conceive how it has ever received the name of *lentiginosus*, which as I have shown before under Telmatobius is as unlike this animal as any species can be. The Rana lentiginosa of Shaw, of which he gives in his general Zoology a tolerably good figure, although copied from Catesby, is perfectly smooth, more resembling a frog than a toad, and therefore well called by him the land frog; whereas the B. musicus is very rough and makes no approach to a frog in its form and habits. It walks rather than hops. Bartram's red toad of Florida was a mere variation of this species, the difference being nothing more than an accidental or voluntary change of color.

The species figured under the name of Bufo cognatus of Say, in the exploration of the Red River of Louisiana by R. B. Marcy, Capt. U. S. A. appears to be this animal.

B. AMERICANUS L. C. l. c. Holbrook l. c. pl. 4.

This species like the preceding varies very much in color; it rather hops than walks.

B. ERYTHRONOTUS Holbrook, l. c. v. pl. 2.

Not having been able for years to obtain a living specimen of this animal I shall say nothing more of it than that it bears not the slightest resemblance to the Bufo lentiginosus (B. musicus) as stated by Mr. Girard in Proceed. A. N. S. vol. p. 86.

B. QUERCICUS Holbrook, l. c. v. pl. 3.

Above thickly covered with small warts,, dusky with a few irregular black spots, many of the warts particularly those on the sides whitish or reddish; a very distinct line of one of these colors runs from the point of the nose along the vertebral column to the vent. Beneath the body is granulate, white, more or less varied particularly on the fore part with black. There is a supraorbital ridge straight and very distinct; upper jaw slightly emarginate. Thumb equal in length to the first finger, feet with two calli, the interior one exactly resembling a toe and equal in length to the first toe.

Length 1. 1, arm ·6, leg 1 inch.

Very common in Georgia in wet places, under logs and pieces of wood.

ENGYSTOMA Fitzinger.

E. CAROLINENSE. Microps Wagler, Stenocephalus Tschudi.

Varying at will very much in color, from dusky to brown, olive-cinereous or yellow cinereous, more or less varied, spotted or speckled with black, beneath pale brownish white, punctate so as to appear spotted.

Very common in the low country of Georgia under logs. In De Terville's Natural History, Bosc confounds this animal with Daudin's Bufo gibbosus. He says he found it in South Carolina, but brought none thence to France, as the skin was so thin and tender, that he was unable to preserve or even describe it: to me the skin appears as strong as that of any other species of Ranina of the same size.

These are all the species of this family of reptiles which I have been able to see in a living state. I hold it to be impossible for any one to make a correct description of an animal which has the power of changing its color at will, unless he has it alive; and this power they all possess in a greater or less degree; when preserved in alcohol they always fade. The difficulty of procuring descriptions made on the spot where the objects are found, has rendered this part of natural history as confused and unsatisfactory, as the researches of botanists who draw up their accounts of plants from dried specimens.

There are a few species with which I was formerly acquainted but which I have not met with or been able to obtain. Among these are a frog which seemed intermediate between R. pipiens and R. palustris, two Hylæ inhabiting Georgia, and another probably an Acris which I formerly described in the Annals of the Lyceum of New York under the name R. pumila. Mr. Baird describes some in the Proceedings of our Society, which have been sent to him from Texas, Mexico, and other remote parts of our country. These I do not here treat of, being certain that I shall never see them in a living state. There is in the waters of ponds and ditches a small frog whose note exactly resembles the bleating of a lamb, so truly as to deceive any one. This animal I have seen, but never succeeded in catching it. It is very common in Georgia and I have heard it as far north as Norfolk in Virginia. It is left to the inhabitants of those parts of our country to determine what it is.

Observations on the North American species of Bats.

By John Le Conte.

Notwithstanding all that has been written by Rafinesque, F. Cuvier and Dr. Bachman on the bats of North America, a diligent study has shown me considerable errors in the accounts of all. Before proceeding to a description of these animals, it is necessary to remark, that every bat which I have seen, has an uncertain numberof transverse wrinkles or plaits on the outer portion of the ear, and has the toes furnished with rather long and fine hairs, as it were fimbriated, wherefore these two marks are omitted as furnishing no good specific characters. All our bats except the Molossus belong to the same genus; the trifling difference in the number of the teeth does not afford a sufficient reason for considering them as different. M. F. Cuvier in the first volume of the Nouv. Annales du Museum, divides the genus into three sections, the Serotinoids, the Noctuloids and the Murinoids. The form of the cranium seems to be the chief mark in distinguishing them from each other. The Serotinoids may be described as having the cranium somewhat inflated and rounded, the jaws short, widened and elevated at the extremity, the facial angle 43°. The European species as far as I can collect, have four upper incisors. In this country we have but two belonging to this section, the Noveboracensis and the cinereus, both of which have but two upper fore teeth. The Noctuloids have the skull rather straight and flat on the top, and the jaws more extended, the facial angle is 30°. They all have four upper incisors except the crepuscularis which has like those of the first division but two. The Murinoids are known by having the cranium inflated and rounded, the jaws elongated a little raised in front with a considerable depression separating them from the cranium, the facial angle is 22°. The V. pallidus which has but two upper fore teeth appears to me to be a Murinoid; all the rest have four upper fore teeth. As for what has been called a Plecotus (even by myself) it certainly belongs to this division: it differs considerably from the Plecotus auritus of Europe, in the form and position of the ears. I am not writing about the animals of a foreign country, and therefore I say no more on this head, than that the P. auritus as far as regards the skull appears to be a Serotinoid. My remarks on the Molossus will appear when I come to describe that species.

VESPERTILIO NOVEBORACENSIS Linn. New York bat, Pennant Arctic Zool. vol. i. p. 184. V. rubellus Palisot de Beauvois, Catalogue of Peale's Museum. V. monachus and tessellatus Rafinesque. Nycticeius Atalapha and Atalapha americana ejusd. Taphyzous rufus Lesson. It likewise belongs according to Leach to his genus Scotophilus, Taphizous rufus. Harlan's description is made from an infamous figure in Wilson's Ornithology.

Dentition. *Upper Jaw,* incisors 1-1 simple, distant. Canines 1-1, hollowed out behind with a perpendicular septum dividing the concavity for its whole length False molars 1-1, concave on the outer and inner surfaces, the calcaneum produced behind into a lobe. Molars 3-3, the first and second with six cusps, three exterior, small apparently formed from the basal ridge which surrounds the teeth; two intermediate and one exterior; the third with three cusps ranged transversely and one posterior.

Lower Jaw. Incisors six, biemarginate. Canines 1-1. False molars 2-2, the anterior one very small. Molars 3-3, with five cusps, two exterior and three interior, the basal ridge wanting interiorly.

A young one taken from the mother's breast, had in the upper jaw, the incisors, the canines, and the false molars; in the lower jaw, the canines and one false molar on each side, all of them hooked like the claws of the toes.

Face black, hairy; nose blunt, emarginate. Ears brown, short, round, almost concealed in the fur, a little hairy, orillon cultriform, blunt, one half the length of the ear, and sparely hairy. Membrane dusky, generally reddish brown along the antibrachium, and more or less so along the great part of the length of the fingers; a portion of the base on each side is hairy, so as to form a straight line from the shoulder to the foot; spot at the base of the thumb white, a few hairs of the same color or of rufous extend down the fourth finger: beneath from the body to the end of the os humeri it is thickly covered with rather long hair, along the fore arm more sparsely so, for nearly one half the width of the wing. The interfemoral membrane includes the whole of the tail, on the upper surface it is densely hairy, the hair being of the general color of the body, sometimes tipped with white, never cinereous at the base; on the under surface it is naked except at the base, where there is an oblong patch of hair extending along the tail, for one third of its length. Feet black, thickly covered with hair.

Color extremely various, scarcely any two being found exactly alike. A very common variety has the hair above four-colored, that is to say, black or dark cinereous at the base, then yellowish brown or fawn-colored, afterwards dark rufous or reddish brown, or orange-tawny or purplish brown, finally very slightly tipped with white, very often with a distinct ring of a darker shade around the neck. Beneath, the hair is three colored, the base dark or light cinereous, then one of the other colors, and tipped with white, so that the pelage is varied with cinereous and the other colors, and powdered over with white: this last color forms a conspicuous spot at the axilla. The pelage is however above sometimes only three-colored, being as before dark cinereous at the base, then pale yellowish, and afterwards bright light rufous or orange without any white tips or very few of them, so as to appear uniformly rufous or orange, beneath rather paler. The lighter the color above, the more does the membrane incline to reddish brown. They have been found of a uniform cream color, and even white, the base of the hair being always cinereous, but are most commonly of different shades of rufous or tawny. The darker the ground the more apt are the hairs to have white tips, although some of dark shades have been found without any of these.

Length 2 in. Tail 1.6. Extent 11.3. Head ·7. Ears ·25. Orillon ·1.

This, the commonest species in the United States, is found everywhere from Canada to Florida, from one end of the country to the other equally numerous. It may even extend into South America, as the description by Lesson of the V. bonariensis in the Zoology of the voyage of the Coquille agrees very well; but the figure of the animal which accompanies it is so wretchedly executed, as to be of no use in determining the point.

V. CINEREUS. Palisot de Beauvois, l. c. V. pruinosus Say, Long's Expedition vol. i. p. 168.

Dentition the same in every respect as in V. noveboracensis. Hair above four-colored, that is to say, black at the base, then reddish-brown, afterwards black, and tipped with white: beneath two-colored, the lower half dark cinereous, the upper yellowish or grey, so that the pelage of the animal appears on the upper side, variegated with reddish brown and black, and powdered over with white, this latter color so disposed as to form transverse curved and waving lines, on the under side, yellowish grey on the sides and cinereous mixed with grey on the other parts. Head above and throat yellowish grey; face hairy; chin very dark brown: nose flat, blunt, emarginate. Ears black, simple round, densely covered both within and without on the anterior portion, with short yellowish grey hair, leaving a distinct narrow, naked margin. Orillon cultriform, blunt and sparsely hairy, half the length of the ear. Membrane dusky, for one third its breadth along the arm brown; sometimes beyond this spotted with brown, very much so near the body. A portion next the body in a straight line from the shoulder to the feet is hairy. There is generally a small white hairy spot at the anterior joint of the humerus (sometimes however the hairs are pale brown, not white), and another at the base of the thumb. The membrane beneath is hairy as far as the third finger for nearly half its breadth, this hairy space joins another of the same width along the sides, and there is generally a large white spot at the axilla or insertion of the humerus. Interfemoral including the whole of the tail, above densely hairy, beneath only at the base, forming a roundish deeply emarginate patch, feet black, sparingly hairy.

Length 3 inches. Tail 2·1. Extent 16·8. Head ·94. Ear ·48. Orillon .25.

I have given to this species the name imposed upon it by Palisot de Beauvois, ann. 1796 in the catalogue of Pealé's Museum, although I am not certain that it differs from the V. lasiurus of Linnæus. This last is said by Temminck to inhabit Cayenne and North America. The description of Temminck suits our animal very well, but whether the two are the same, remains yet to be determined. The figure in Schreber is undoubtedly taken from a V. noveboracensis The V. bonariensis described and figured by Lesson in the Zoology of the voyage of the Coquille vol. i. p. 137 tab. 62, may be either the one or the other, the figure is so excessively bad that nothing can be made of it. This is the largest of all the bats found in the United States, it is not common, and is seen more frequently in the middle than in the northern or southern states.

I have never had it in my power to examine more than six or seven individuals of this species, and therefore cannot say how far the colors may vary.

V CREPUSCULARIS.

Dentition the same as in the two former species.

Hair black, above tipped with chestnut brown, beneath with paler or cinereous brown more or less distinctly varied by the black of the lower part of the hair. Head rather depressed, face flat, black, naked, with a few scattered, long, coarse hairs, and a small wart over each eye; nose broad, flat, blunt, emarginate; chin with a small double wart on the lower part. Ears shorter than the head, triangularly ovate, rounded at the point, slightly emarginate on the hinder edge, dusky, naked. Orillon short, dolabriform, blunt. Membrane very thin, dusky, naked except a narrow space next the body. Interfemoral including the tail except the two last joints naked, except a small portion of the base which both above and beneath is slightly hairy.

Length 2·2. Tail 1·4, naked part ·15. Extent 10·5. Head ·7. Ears ·3. Orillon ·19.

Inhabits Georgia.

This is the V. creeks of F. Cuvier, this name however being unmeaning and indeed ridiculous, I have substituted for it the name given to it by me many years ago and mentioned in Dr. McMurtrie's translation of the Regne Animale.

All the species of American Bats described by the illustrious French Naturalist in Nouv. Annales du Museum vol. i. p. 1 were given by me to his brother the Baron, and I distinctly remember this species as having been among them.

V. FUSCUS. Palisot de Beauvois l. c., V. arcuatus Say, Long's expedition l. c., V. gryphus Cuvier l c. p. 15.

Dentition. Upper jaw, incisors 2–2, the anterior one emarginate, the posterior one very small. False molars 1-1 concave on the outer and inner surfaces. Lower jaw false molars 2-2. Molars and canines in both jaws like those of the preceding species.

Hair long dark plumbeous, above tipt with chestnut brown of different shades of intensity, passing into rusty brown and fawn color, beneath with paler shades of the same colors and sometimes with cinereous brown or grey. Face black, dusky or brown, according to the darker or lighter color of the fur, nearly naked, with a few scattered coarse hairs. Nose flat, blunt, emarginate, and with the chin rugous. Ears dusky or brown, shorter than the head, outwardly hairy at the base for one third of their length, upright, somewhat triangular, blunt, the hinder edge very convex, slightly emarginate near the tip, revolute on the outer edge. Orillon acinaciform obtuse. Membrane naked, hairy only next the body, black, dusky or brown. Interfemoral including the tail, except the three last joints, naked except a triangular patch of hair at the root of the tail.

Length 3 in. Tail 1·55, naked part ·2. Extent 12·5. Head ·9. Ears ·6. Orillon ·22.

Very common particularly in the Northern States.

V. CAROLINENSIS. Geoff. St. Hilaire, Ann. du Museum, viii. p. 193

Dentition the same is in V. fuscus.

Hair dark plumbeous, above tipped with chestnut brown, beneath with cinereous brown. Face black nearly naked with a few scattered coarse hairs. Nose flat, blunt, emarginate and with the chin rugous. Ears black rather long, outwardly hairy for one half of their length, ovate, upright, blunt, revolute and emarginate on the hinder edge. Orillon lanceolate, blunt, more convex on the inner than on the outer side. Membrane black, naked, interfemoral naked except beneath, where there is a triangular patch of fur which extends from the insertion of the tail for one third its length ; including the tail except its three last joints, and furnished on the under side with some scattering hairs.

Length 4·4. Tail 1·9, naked part ·2. Extent 11·8. Head ·9. Ears ·7. Orillon ·3

Inhabits Georgia and Carolina ; very much resembles the preceding, but is easily distinguished by the hairy ears and the differently shaped orillon.

V. URSINUS Temm. l. c. p. 235.

Dentition similar to that of the two preceding species.

Hair dark plumbeous, above tipped with bright chestnut brown, beneath with paler or cinereous brown. Face black, naked with coarse scattering hairs ; nose flat, blunt emarginate. Ears dusky, shorter than the head, hairy outwardly for nearly one fourth their length, upright, oval, entire, revolute on the outer edge, Orillon acinaciform, obtuse. Membrane black, naked, hairy only near the body. interfemoral entirely naked, including the tail except the three last joints.

Length 2·8. Tail 1·65, naked part ·2. Extent 12·75. Head ·9. Ears ·5. Orillon ·2.

Inhabits New York, rather rare.

V. PHAIOPS Temm. l. c. p. 234.

Dentition as in the preceding.

Hair dark plumbeous, above tipped with chestnut brown, beneath with paler or with cinereous brown or greyish. Face black, nearly naked with a few coarse hairs. Nose flat, blunt, rugose, emarginate. Ears black, shorter than the head, outwardly hairy for about one third of their length, somewhat triangular, upright, blunt, sinuous or bi-emarginate on the outer edge. Orillon oblong, rounded at the tip. Membrane black, naked ; interfemoral naked except some scattered hairs on its under side, including the tail except the three last joints.

Length 2·5 in. Ta l 1, naked part ·15. Extent 12·5. Head ·35. Ears ·425. Orillon ·2.

Inhabits the Northern States.

V. CAROLI Temm. l. c. p. 237.

Dentition as before.

Hair long dark plumbeous, above tipped with dark chestnut brown, beneath with paler or greyish or yellowish cinereous. Face black, naked with a few coarse hairs. Nose flat, blunt, emarginate, rugous. Ears short, black, naked except for about one fourth their length from the base on the outer side, emarginate behind almost from the tip to the basal lobe. Orillon lanceolate, blunt, rounded at the tip, a very little curved on the posterior edge, straight on the anterior. Membrane black, naked, except near the body. Interfemoral naked except a few scattered hairs near the body; including the tail, of which the last joint projects beyond it.

Length 3·8. Tail 1·5, naked part ·1. Extent 11·7. Head ·75. Ears ·45. Orillon ·2.

Inhabits from New York to Florida.

This with the four preceding are very nearly related to each other, so much so as to be easily taken the one for the other; we therefore find them all called V. arcuatus of Say or V. caroliniensis of Geoff. St Hilaire, these two being considered identical. They however differ in the shape of the ear and in the orillon. These two parts alone I have found in all species of Vespertilionidæ to afford unvarying characteristics.

The *fuscus* has the ear somewhat triangular, very concave on the outer edge and emarginate near the tip, the orillon acinaciform.

The *carolinensis* has the ear hairy for one half its length, ovate and emarginate on the hinder edge, the orillon is lanceolate and blunt.

The *ursinus*, ear oval, entire; that is to say not at all emarginate, the orillon acinaciform and obtuse.

The *phaiops*, ear somewhat triangular, sinuous or bi-emarginate on the outer edge, orillon oblong, blunt.

The *caroli* has the ears ovate, emarginate behind almost from the tip to the base, and the orillon lanceolate, blunt, rounded at the point; a little curved on posterior edge.

V. PULVERULENTUS Tem. ii. p. 235. V. Audubonii Harlan, Med. & Phys. Researches, p. 90. V. noctevagans L. C. olim.

Dentition the same as in the five preceding species, except that the false molars in the upper jaw are 2–2, the anterior one frequently pressed inward by the posterior one; and in the lower jaw the false molars are 3–3.

Hair black or very dark brown, generally tipped with white or pale brown, or brownish grey in rather a scattering manner. Face somewhat hairy, nose blunt emarginate; fore part of the throat with a large wart. Ears moderate, ovate, blunt, the lower half covered with hair, granulate within the outer edge which is somewhat revolute and entire, anterior part of the helix highly developed, prominent and straight, forming a winged appendage near the head. Orillon short, culriform, blunt, membrane naked black or dusky, interfemoral including the tail, except the last and one half of the penultimate joint, thinly covered for one half its length with long fine hairs like those of the body tipped very slightly with greyish, the under side is furnished with distant hairs disposed in lines.

Inhabits from New York to Georgia.

This species has the head of a Noctuloid and the teeth differing from all the others. Is sometimes found entirely black.

V. SUBULATUS Say, Long's Expedition, vol. ii. p. 65.

Dentition. Upper jaw, incisors 2–2 distant by pairs, the anterior larger and emarginate, false molars 3–3 anterior one small, intermediate one minute and the posterior large. Molars as in all the preceding species. The teeth in the lower jaw are also the same except that there are 3 false molars on each side, the two anterior of which are not half the length of the posterior.

Hair above black, tipped with very dark chesnut brown or with dark fawn color, beneath dark cinereous tipped with brownish grey. Face black, hairy, nose blunt, slightly emarginate. Ears black, moderate, very slightly hairy at the base, ovate, emarginate on the posterior edge. Orillon subulate, pointed. Membrane naked dusky or dark brown, a little hairy next the body, the humeral portion extending beyond the bone into an angle. Interfemoral hairy near the base for about one-third its length both above and beneath, including the tail except the last joint and one half of the penultimate.

Length 2.9. Tail 1.1. Naked part .1. Extent 9.4. Head .9. Ears .4. Orillon .3.

Inhabits everywhere. Varies much in color from the darkest chesnut to light fawn. With this species, commences the family of Murinoid bats.

V. LUCIFUGUS L. C. in Dr. McMurtrie's translation of the Regne Animal.

Dentition the same as in V. subulatus.

Hair dark plumbeous, above tipt with dark chestnut brown, beneath with pale brown. Face black, hairy, nose flat, blunt, rugose, emarginate. Ears black, naked, except about one fourth their length outwardly from the base, so much emarginate outwardly as to appear hooked. Orillon lanceolate, blunt, a little convex on the outer edge, straight on the inner. Membrane black, naked except near the body. Interfemoral naked, except a few scattered hairs on the under surface, including the tail except the last joint.

Length 3.8. Tail 1.6. Naked part .1. Extent 11.7. Head .75. Ears .45. Orillon .2.

Inhabits Georgia.

Much resembles the preceding but has the ears of a different form as well as the orillon.

V. GEORGIANUS Cuvier l. c. p. 16.

Dentition the same as in subulatus except that the posterior false molar of the upper jaw has an interior, basal, bi-emarginate cusp formed from a prolongation of the calcaneum of the tooth, and the canine of the lower jaw has an interior, blunt, basal lobe.

Hair dark plumbeous, above tipped with bright rufous, the hair so arranged that the pelage appears varied with black particularly on the upper part of the back, beneath the hair is tipped with fawn color or rufous. Face black, very hairy, nose flat, blunt, rugose, emarginate. Ears perfectly naked, short, ovate, blunt, slightly emarginate on the outer edge, orillon oblong, blunt, straight. Membrane dusky or very dark brown slightly hairy next the body. Interfemoral above thinly furnished with rather long hairs for nearly one half its length, beneath with a few scattering hairs which spring from the transverse nervures, including the tail, except the last joint and one half of the penultimate.

Length 3 in. Tail 1.6. Naked part .1. Extent .9 in. Head .55. Ears .35. Orillon .2.

Inhabits Georgia.

Said by Dr. Bachman to be same with the V. subulatus which it very slightly resembles.

V. MACROTIS. Plecotus macrotis L. C. McMurtrie's translation of Cuvier's Regne Animal, Appendix.

Dentition. Upper jaw incisors 2–2, the anterior bilobed, the posterior smaller. False molars 2–2, the anterior one very small, the base of the posterior one projecting backwards into a flat, sharp surface. Molars and canines as before. Lower jaw, incisors 6, crenate. False molars 3–3, the two anterior small. Molars and canines as in other species.

Hair black above slightly tipped with dark chesnut brown, beneath with whitish, sometimes entirely black both above and beneath, except a small cinereous space near the arms. Face black nakedish, with a prominent tubercle on each side behind the nostrils, these tubercles converge towards each other, leaving a considerable hollow space on the top of the head, which is flat, the nose not bilobed. Ears ovate broad, naked, dusky, much longer than the head, bending forwards, the hinder margin somewhat involute, the inner margin near the base hairy. Orillon long, subulate, broad at the base a little convex on the inner side. Membrane naked dusky, interfemoral including the tail except the last joint.

Length 2.1. Tail .2. Naked part .1. Extent 10 in. Head .75. Ear 1.05. Orillon .25.

Inhabits Georgia.

This species though at first sight very much resembling the so called Plecotus auritus of Europe, differs from it particularly, in having the ears perfectly separated at the base, and wants the small lobe or blunt tooth on their inner edge. The cranium is entirely that of a Murinoid bat, and the teeth of the two species agree.

V. PALLIDUS.

Dentition. Incisors 1–1, large simple. Canines 1–1, a little concave on the outer side, with an internal, basal, rather blunt cusp. False molars 1–1. Molars first and second as in all the others, the third with four cusps, three of them transverse, the interior one smaller, and one posterior.

Lower jaw incisors .4. False molars 2–2, the anterior one smaller, rather interior. First and second molars as in others, the third with three cusps, not transverse, the interior one larger and transversely deeply emarginate.

Hair light fawn-colored, tipped with darker, beneath paler. Face hairy dark brown. Nose rounded, emarginate. Ears longer than the head, oval, entire, very pale dusky brown. Orillon nearly one half the length of the ear, linear, blunt. Membrane thin naked brown. Interfemoral including the tail except the two last joints.

Length 3. Tail 1.5. Naked part .1. Extent 12.1. Head .9. Ears .95. Orillon .4.

Inhabits California.

Differs from all the other species in having but 4 lower incisors; I hesitate therefore to arrange it with the Serinoid or Murinoid Bats and place it at the end of these two families.

RHINOPOMA CAROLINENSE Geof. St. Hilaire, Dict. de Sciences Naturelles tome xlv. ann. 1829. Nycticea cynocephala L. C. M'Murtrie's translation of Cuvier's Regne Animale vol. i. appendix. Molossus cynocephalus and fuliginosus Cooper, Ann. Lyceum New York, vol. iv. p. 65.

Dentition. Upper jaw, incisors 1–1, simple, distant, convergent at the points so as almost to meet. Canines 1–1 curved outwards, so deeply grooved in front as to appear almost double. False molars 2–2 the anterior one very small, the posterior one with a sharp basal cusp. Molars 3–3, the first and second with seven cusps 3 exterior, 2 intermediate and 2 interior, the third with five cusps 2 exterior, 2 intermediate and 1 interior. Lower jaw incisors 6, approximate, emarginate. Canines 1–1, simple slightly curved inwardly. False molars 2–2, the anterior one smaller. Molars 3–3 each with 2 exterior and 3 interior cusps.

Hair fine and soft, cinereous tipped with brownish dusky, beneath rather paler. Face naked, nose turned up, broad, blunt, channeled on the top, crenately serrate on the front margin, upper lip very large, tumid, pendulous, with eight perpendicular grooves. Ears projected forwards, broad, rounded, not united on the top of the head, but running down the sides of the forehead to the root of the nose, outwardly produced downwards and forwards to the corner of the mouth, and very obtusely emarginate about one third of the distance from the top, the upper part has inwardly from eight to ten small rather pointed tubercles near its margin. The ears have likewise an internal fold and a small thick round fleshy lobe opposite the orillon and concealing it from view. Orillon small oblong and rectangular; the lower part of the outer edge of the ear is double as in many other animals, for instance in cats and dogs. Membrane rather thicker than common, naked, dusky, the interfemoral above more or less thinly covered with short and soft hair, including the tail, one third part of which projects beyond it. The inner and outer toes wooly outside, the outer toe somewhat opposable to the others.

Length 2.5 in. Tail 1 25. Extent 10.2. Head .95. Ears .4. Orillon .1.

Inhabits Georgia and South Carolina.

It is very remarkable what confusion exists in authors with regard to the genus of this animal. It was called by Geof. St. Hilaire in 1805 Molossus, afterwards in 1814 Nyctonomus, again was described by him as Rhinopoma oaroliniense; it likewise belongs to the genus Dysopes of Illiger and the Dinops of Savi, yet none of their descriptions either of the genus or the species appear to be correct; they all seem to have confounded this North American bat with the Melossus velox certainly an inhabitant of South America, and plainly belonging to a different genus. Mr. Cooper in the Annals of the Lyceum of New York has made two species of it, Molossus cynocephalus and M. Lecontii, founding the difference in the plaitings of the ears in the latter. As I have before observed this is a character common to all bats: in dried specimens these striæ frequently are evanescent.

M. Temminck's remark on the fore teeth of his Molossus that they vary in number and are pushed out of place by the canines is a mere supposition. Age of course causes the teeth to fall out, when the base of the canines will advance somewhat, and cover the open alveoli, but in most cases, these always remain open, or at most one or two of them may close as is observable in other animals that have the misfortune to lose one or more of their teeth. In the M. velox which has but four incisives in the lower jaw, placed in front at the base of the canines, he supposes them to have been once situated in a space between the canines, and afterwards to be pushed out in front (without any presumable function) of their almost united bases; an impossibility. This position of the lower fore teeth is to be seen in every age of the animal.

I have observed fifteen individuals of this species: one had no incisors in the lower jaw; two had five; three had four, and the rest six.

This Bat is so numerous in the cities of the South as sometimes to render houses uninhabitable, by their disagreeable smell, and the noise which they make in moving about. It appears to be equally common in the island of Cuba.

Of Bats described by others, the following with but one exception I have never seen, Dr. Bachman in the viii. volume of the Journal of this Society, mentions four species: V. monticola he says resembles Say's bat; what species he calls by that name I cannot discover. V. virginianus seems to be the V. humeralis of Rafinesque. I have not seen this last for many years, and therefore cannot pronounce definitely concerning it. The V. Leibii and Californicus are equally unknown. Of Mr. Rafinesque's species, it is impossible to determine the following; there is a good reason however to doubt, whether they are distinct from others which are well known; V. cyanopterus, V. melanotis, V. calcaratus, V. phaiops afterwards described in his Annals of Nature No. 1 as Eptisecus melanops, V. megalotis, V. mystax afterwards called in the Journal de Physique vol. lxxxviii. p.417, Hypexodon mystax and Eptisecus melas. M. Cuvier's V. Salarii may be the fuscus, and his subflavus the Caroliniensis; his crassus likewise I cannot determine. M. Temminck's V. erythrodactylus, Temm. vol. ii. page 235, remains among those unknown by me.

Notices of some new and little known Birds in the collection of the U. S. Exploring Expedition in the Vincennes and Peacock, and in the collection of the Academy of Natural Sciences of Philadelphia.

By JOHN CASSIN.

1. MUSCIPETA CYANICEPS, nobis.

Form. Bill rather long, wide at base, abruptly compressed towards the end and furnished with about six pairs of strong rigid bristles at the base, some of which are as long as the bill. Feathers of the head above somewhat elongated and probably erectile, wings rather long, fourth primary longest, tail long, wide, central feathers but slightly exceeding others next to them, tarsi rather long, slender, toes short, feeble.

Dimensions. Total length (of skin) about 6¼ inches, wing 3, tail 3½ inches.

Colors. Entire head and breast dull blue, every feather having a longitudinal central line of a paler shade or light blue. Upper parts of the body, the abdomen and several of the outer feathers of the tail fine rufous, palest on the abdomen, quills dark brown, secondaries edged with rufous. Central feathers of the tail dark brown, which is the color also of the inner webs of the feathers next to them. Bill dark, tarsi lighter.

Hab. Philippine Islands. Spec. in Coll. Ex. Exp. in Nat. Mus. Washington.

Obs. This is a very handsome small species of this genus, and bears a resemblance to *Muscicapa borbonica*, Gm. Buff. Pl. Enl. 573, fig. 1, which is an inhabitant of the islands of Madagascar and Mauritius. From that species the present birds may easily be distinguished by the pale longitudinal lines on the blue parts of the plumage, in addition to which it is larger and has the tail disproportionately longer.

The only specimen that I have ever seen of this species is in the collection of the Exploring Expedition, and is labelled as having been obtained at the Philippine Islands. It belongs strictly to the same subgeneric group as *M. borbonica*, and shows a general relationship to several other African species. It will be figured in the forthcoming Atlas to my volume on the Birds of the Exploring Expedition.

2. LANIARIUS MULTICOLOR. G. R. Gray, Genera of Birds, i. p. 299, pl. 72.

Hab. Western Africa. Spec. in Mus. Acad. Philad.

Obs. A single specimen of this handsome species is in the collection of the Academy, and was obtained by Dr. MacDowell, on St. Paul's river, Western Africa.

3. HYPHANTORNIS FLAVIGULA, Hartlaub, Rev. Zool. 1845, p. 406.

Hyphantornis Grayi. Verreaux, Rev. et Mag. de Zool. 1851, p. 514.

Hab. Gaboon country, River Moonda. Spec. in Mus. Acad. Philada.

According to Mr. DuChaillu, in whose collection are numerous specimens, the birds described as above are the two sexes of the same species. *H. flavigula* is the female.

In Mr. DuChaillu's notes now in my possession I find the following in relation to this species:

"This bird frequents the borders of the woods, or more frequently the tufted bushes which are not found far from habitations. It is always in these thickets, and if it were not for its cry, which indicates the place where it may be found, it would be very difficult to procure it. It is always in company with its female, and does not live in troops. Sometimes two pairs may be seen on the same tree. This bird generally makes its nest in these very thick bushes and in the midst of the leaves; the two nests in my collection, I found within ten yards of a house, and both contained eggs of a rose color."

"This bird is found in the dry season and at the commencement of the rainy season, when it disappears."

4. SYCOBIUS NIGERRIMUS, (Vieill.)

Ploceus nigerrimus, Vieill.

Hab. Gaboon country and River Moonda. Western Africa.

Several specimens of this rare species, remarkable for the uniform deep black of its plumage, are in the collection of the Academy. Some of them were collected by Mr. DuChaillu on the River Moonda, and others have recently been obtained in a collection from the Gaboon country, obtained in New York by Mr. John G. Bell.

5. SYMPLECTES PRINCEPS. Bonap. Consp. Av. p. 107.

Hab. Lagos, Western Africa.

A specimen of this bird is in an interesting collection made by John L. Burt, M. D., of the U. S. Navy, at Lagos, and recently presented to the Academy.

6. HYPHANTORNIS CASTANEOFUSCA, (Less.)

Ploceus castaneofuscus, Lesson.

This bird is in Dr. MacDowell's collection from St. Paul's river, Western Africa.

7. TURACUS GIGANTEUS, (Vieill.)
Musophaga gigantea, Vieillot.

This bird is also in Dr. MacDowell's collection from St. Paul's river.

8. MOHOA NOBILIS (Merrem.) Temm. Pl. col. 471.
Gracula nobilis. Merr. Beyt. zur Besond. Gesch. Vögel p. 8, pl. 2 (1784 name on plate.)
Merops niger. Gm. Syst. Nat. i. p. 465 (1788.)
Merops fasciculatus. Lath. Ind. Orn. i. p. 275 (1790.)

Hab. Sandwich Islands. Spec. in Mus. Acad. Philada. and Nat. Mus. Washington.

The specimens in the collection of the Academy were brought by Dr. Townsend from the Sandwish Islands, and in the collection of the Expedition in the Vincennes and Peacock are numerous specimens which appear to represent both sexes. The female much resembles the male, but is smaller and with the colors duller, with tinges of brown on the throat and occasionally on the upper parts of the body. Both sexes have the tail long.

At present, I regard the bird figured by Reichenbach in "Die Volstandigste Naturgeschichte" Birds, pl. 604, fig. 4099, and described in "Handbuch der speciellen Ornithologie," Scansoriæ p. 333, as a distinct species, though given by that distinguished naturalist as the female of "Mohoa fasciculatus" (fig. 4098). It is as follows:

9. MOHOA BRACCATA, nobis.

Smaller than the preceding, bill less curved, tail moderate, central feathers longest.

Tibiæ yellow. Head above black, throat and breast with every feather having a small terminal spot of ashy white, back, rump, and under parts dark chocolate brown, with a few longitudinal lines of white on the back. Wings and tail brownish black, the former edged with white at the shoulder. Bill and feet dark.

Dimensions.—Total length 8½ inches, wing 3¾, tail 3½ inches.

Hab. Sandwich Islands. Spec. in Mus. Acad. Philada.

The only specimen that I have ever seen of this species was brought by Dr. Townsend from the Sandwich Islands and is marked as a male. It has heretofore in the collection of the Academy been mistaken for *Certhia pacifica* Gmelin, but is clearly not that bird and but little resembles it as far as can be determined from the plate in Audebert, or from the descriptions by Gmelin and Latham. In addition to these two there is a third species of this genus.

10. MOHOA ANGUSTIPLUMA, (Peale.)
Entomiza angustipluma. Peale Zool. Exp. Vincennes, Birds p. 147 (1848.)

Plumage of the head, neck and breast, with the webs of the feathers composed of few filaments and presenting an open or skeleton like texture, many feathers of the throat terminated with bristles. Bill curved, wings rather long, tail long wedge shaped, legs and feet strong. Larger than either of the two preceding.

Head and neck above dark brown, every feather having a longitudinal central stripe of dull white, tinged with greenish yellow on the latter. Other upper parts including wings and tail, brown, on the back with longitudinal stripes of white, quills and tail feathers edged with olive green on their outer webs, rump tinged with olive. Wide stripe from the base of the bill under the eye, ending in a large spot on the cheek, black.

Throat dull white tinged with yellow, breast and abdomen dull white, every feather margined with dull brown, flanks and under tail coverts dark rufous, bill and legs dark.

Dimensions. Total length 13½ inches, wing 6, tail 6½ inches.

Hab. Hawaii. Spec. in Nat. Mus. Washington.

One of the most remarkable of the ornithological acquisitions of the Expedition in the Vincennes and Peacock, and clearly of this genus. The feathers of the head and breast in this bird present a singular character on account of the filaments composing the webs being unusually few, and at such a distance from each other as not to touch, nor become adherent. The specimen described may not be adult and its sex is not stated. It does not appear to be related to *Strigiceps*, Lesson.

This species will be carefully figured in the Atlas to my volume on the Quadrupeds and Birds of the Exploring Expedition now nearly ready.

Note on the Miocene and Post-Pliocene deposits of California, with descriptions of two new Fossil Corals.

By T. A. Conrad.

Post-Pliocene deposits of shells occur at various places on the coast of California, as Santa Barbara, San Pedro, &c., but I have seen specimens of Miocene fossils from no other locality on the coast than near the former town, where they were obtained by Dr. Heermann, who informs me that they are very little elevated above the sea, and that the Post-Pliocene fossils rest immediately upon them. This Miocene deposit consists chiefly of fine loose brown sand and small corals, the most of which are a species herein described as *Idmonea Californica.* The shells have been described in the Proceedings for February, 1855, p. 267, and consist of *Mercenaria perlaminosa*, *Pecten Heermanni*, *Diadora crucibuliformis*, *Pandora bilirata* and *Cardita occidentalis.*

The *Mercenaria* and *Pecten* are closely related to species of the Virginia Miocene, and indeed there is an extraordinary analogy in all the above mentioned shells to species of the Atlantic Miocene deposits; and what is equally remarkable, they have no resemblance to the existing California species, many of which are imbedded in sand above them; affording perhaps a stronger contrast between the two groups than occurs in any other part of the world. The Atlantic Miocene and Post-Pliocene on the contrary contain a few species in common and others which are analogous.

IDMONEA, *Lamouroux.*

Idmonea Californica. Branches compressed, slender, bifurcated; tubular openings projecting, irregularly grouped, but disposed to form in transverse series; longitudinal line between the openings or cells, microscopic or obsolete; reverse surface plano-convex, tranversely wrinkled and slightly furrowed; section exhibiting 15 to 20 angular pores.

The branches of this species are about ⅛ of an inch wide. I have not seen any among them anastomosed. It belongs to the genus *Crisisina*, D'Orbigny.

Among these corallines, is a species of *Tubulipora*, a *Retepora* and a *Lichenopora* which may be named

Lichenopora Californica. Adhering; tubular openings numerous, arranged in irregular branching rays; central depression rather deep and with numerous unequal pores. Diameter about ¼ of an inch.

Post-Pliocene.

Near Santa Barbara and San Pedro, Dr. Heermann collected a number of fossil shells of the same species which inhabit the adjacent coast, among which are *Platyodon cancellatum*, Conrad, *Schizothærus Nuttallii*, Con., *Vinus Nuttallii*, Con., *Tellina nasuta* and *Tapes diversa*, Sowerby, among the bivalves, and a number of univalves.

Description of a new species of Pentamerus.

By T. A. Conrad.

Pentamerus laqueatus. Ovate; larger valve inflated, with about 28 angular ribs; mesial ridge but little prominent, with 5--6 ribs rather larger than the others; smaller valve slightly ventricose with a wide but shallow depression on each side; basal margin sinuous.

Locality. Delphi, Indiana. Mr. Hill. This species resembles *P. Aylesfordii*, but is quite distinct.

Description of two new species of Hesperomys.

By JOHN LE CONTE.

Dr. Bachman, in Audubon's Quadrupeds of North America, states that the Hesperomys leucopus inhabits the southern regions of our country. Although I have resided in the lower part of Georgia for a great portion of my life, I never saw it there. There are however two species which he seems to consider the same, and which he has confounded with the northern animal. An accurate and detailed description of these will show very distinctly how much they differ. These two species are the gossypinus and the cognatus. The first was described by me in the Proceedings of the Academy, vol. vi. p. 411, and is very easily distinguished from the other by its larger size. The second, which I was led by the assertion in the Quadrupeds of North America to consider as the Hesperomys leucopus, a more careful examination and comparison have shown to be entirely distinct. It appears in some degree allied to the H. gossypinus, but its manners are very different.

H. COGNATUS.

Hair dark plumbeous, above tipt with dusky and rufous-brown, with the latter more particularly on the sides, beneath with white, but in such a manner that the dark color of the lower portion of the hair shines through the white. Head large rather blunt, upper half of the cheeks inclining to rufous, ears large, open, naked except the lower part of the outer edge, feet flesh-color, tail slightly hairy, beneath whitish.

Length 3.4 in. Tail 2.2 in. Head 1.2. Fore leg 1.1. Hind leg 1.6.

This animal is easily distinguished from the H. leucopus by the under parts never being of the pure and snowy whiteness that gives so much beauty to the northern animal; they are however very nearly related. The relative difference of the fore and hind legs is not so great as to cause it to leap and not to run when endeavoring to escape pursuit. In size its dissimilarity to the H. gossypinus is most remarkable. This last also has the under side of the tail pale brown. The other likewise wants the narrow whitish border to the ears.

Inhabits Georgia and South Carolina; in the winter it frequents houses like its analogue in the north.

I have the pleasure to add to our daily increasing Fauna another species of this genus which I have received from Michigan. It likewise appears somewhat allied to H. leucopus but has very distinctive characters in its colors.

H. GRACILIS.

Hair dark slate-color above, a little tipped with brown, cheeks, line above the mouth, chin, throat and body beneath white, allowing the dark color of the lower part of the hair to shine through in such a manner as to cause these parts to appear grey. Outer side of fore legs brownish, thighs slate-colored both above and beneath, feet pale grey, nearly white. Head narrow, nose somewhat pointed, ears large, open, narrowly edged with whitish. Tail longer than the head and body.

Length 3.8 in. Tail 4 in. Head 1.2. Ears .6. Fore leg .1. Hind leg 1.5.

Inhabits Michigan; Prof. Baird.

We have in this genus three species which resemble each other. I have added below, short diagnostic marks by which they may be easily distinguished.

H. leucopus, supra læte badius, interdum prope aurantiacus, subtus niveus, coloribus a se abrupte disjunctis, pedibus posticis anticis plus duplo longioribus.

H. cognatus, supra nigro-fuscescente, et fusco variegatus, subtus albidus tanquam cinereo-mixtus, pedibus nontam imparibus.

H. gossypinus, supra fuscescente-badius, lateribus dilutioribus, subtus cinerascente-albidus. Corporis magnitudine valde a duobus precedentibus differt.

Notices of some Tape Worms.

By JOSEPH LEIDY, M. D.

1. TAENIA SOLIUM, Lin.

Hab. Occasional in the Anglo-American and in the Negro. I have one specimen with segments, 6 lines long by 2 lines wide, obtained by Prof. Agassiz, from an Indian of Lake Superior.

Note. Among all the tape-worms from man, which I have seen in this country—and I have taken the trouble to examine specimens in many localities, —I have never yet met with the *Dibothrium latum*, (*Bothriocephalus latus*).

2. TAENIA LATICEPHALA, Leidy. Head large; acetabula opposite, very prominent, large, hemispherical; mouth slightly prominent, unarmed. Neck short. Anterior segments of the body short, oblong square; posteriorly square. Generative apertures marginal, alternate. Protruding penes, elongated conical. Length of one specimen 9 inches, greatest breadth ¾ of a line. Breadth of head ½ a line; of neck ¼ a line.

Hab. The small intestine of *Hystrix dorsata.*

3. TAENIA SERRATA, Goeze. Head not broader than the neck, convex anteriorly; mouth prominent, furnished with a circle of strong hooks. Neck long. Anterior segments transversely oblong or cuneate; posteriorly square. Length of three specimens 9 to 12 inches; greatest breadth 1½ lines. Breadth of head ⅓ of a line.

Hab. From the small intestine of an Esquimaux Dog, which was brought from the Arctic regions of North America, by the eminent navigator, Dr. E. K. Kane, U. S. N.

4. TAENIA CUCUMERINA, Bloch.

Hab. Common in the small intestines of all varieties of our Dogs.

5. TAENIA ELLIPTICA, Batsch.

Hab. Common in the Domestic Cat.

6. TAENIA CRASSICOLLIS, Rudolphi.

Hab. Numerous specimens were obtained from the small intestine of a single Cat.

7. TAENIA PUSILLA, Goeze.

Hab. Not uncommon in the introduced Norway Rat.

8. TAENIA PECTINATA, Goeze.

Hab. Eight fragments from 1 to 4 inches long, with the greatest breadth 1½ lines, and having cuneate segments, short and broad, were obtained by Mr. Schafhirt from the small intestine of *Lepus sylvaticus.*

9. TAENIA EXPANSA, Rudolphi.

Hab. The anterior two feet of a specimen were obtained from the small intestine of an Ox.

10. TAENIA BACILLARIS, Goeze ?

Hab. Several fragments, each almost an inch in length and half a line in breadth, with short and broad cuneate segments, were obtained by Prof. Baird, from the intestines of *Scalops aquaticus.*

11. TAENIA PESTIFERA, Leidy. Head small, continuous with the neck; acetabula terminal and oblique, hardly prominent beyond the outline of the neck, hemispherical; mouth not prominent, unarmed. Neck long. Segments cuneate; those anterior short and broad, those posterior longer.

Hab. Three specimens from 1½ to 2 inches long, with the greatest breadth two-fifths of a line, were obtained from the small intestine of *Molothrus pecoris* by Prof. Baird; and one specimen 4½ inches long with the greatest breadth ⅖ of a line was procured from the small intestine of *Dolichonyx oryzivora* by Mr. Schafhirt.

12. Taenia Strigis acadicæ, Leidy.

Two specimens each about 1½ inches long, and apparently consisting of the whole body, except the head and neck, were obtained by Prof. Baird, from the small intestine of *Nyctale acadica*. The body is compressed cylindroid, with the anterior segments narrow, conical and those posteriorly moniliform. Breadth anteriorly ⅛ of a line; posteriorly ⅓ of a line.

13. Taenia variabilis, Rudolphi ?

A fragment 3 inches long and 1 line wide was procured by Prof. Baird, from the intestine of *Scolopax minor*. Segments short, broad, and subcampanulate, the infero-lateral borders being everted.

14. Taenia dispar, Goeze.

Several specimens obtained by Prof. Agassiz, from the intestine of *Menobranchus maculatus*, without the head, are 3 inches long and ½ a line wide, and have longitudinally oblong segments, with lateral and alternate marginal generative apertures, and filiform penes. I further have obtained four specimens from *Rana pipiens* ; and two about 6 inches in length, from *Bufo americanus*.

15. Taenia lactea, Leidy. Head small, continuous with the neck, without rostellum ; acetabula anterior, hemispherical, situated at the four angles. Neck moderately long. Segments anteriorly transversely oblong, posteriorly longer than the breadth, square with rounded angles. Generative apertures marginal (indistinct in the specimen).

Hab. One specimen 16 inches long and ⅔ of a line wide, was found in the intestine of *Tropidonotus sipedon*. In alcohol the specimen contracted to half the original length and widened to 1 line.

16. Taenia gibbosa, Leidy. Head minute, discoid : acetabula horizontal, contiguous, circular ; mouth not prominent, unarmed. Neck long, broad, and thick. Segmented portion of the body comparatively short ; segments transversely oblong ; the last one discoidal. Generative apertures not seen.

Hab. Two specimens, 1½ inches long, with the greatest breadth 1⅓ lines, were obtained by Dr. Le Conte, from the intestine of a species of *Lamna* inhabiting the Pacific coast of North America.

17. Dibothrium punctatum, Rudolphi. Head 1 to 1½ lines long ; oblong ; bothria marginal, linear. Neck none. Anterior segments cuneate or triangular ; posterior ones quadrate ; each with an appearance of three sub-divisions, with the sub-segments having a pair of generative apertures, in the course of a longitudinally depressed, dark colored line, passing the length of the body. Length 1 foot ; greatest breadth 1¾ lines.

Hab. Intestine of *Platessa plana*.

18. Ligula monogramma, Creplin.

A specimen, imperfectly developed, 6 inches long with the greatest breadth 6 lines, was obtained from the abdominal cavity of the *Morrhua americana*, by Mr. Schafhirt ; and two specimens of almost the same length, with the greatest breadth 5 lines, were obtained from the abdominal cavity of *Leuciscus pulchellus*, by Prof. Baird.

An enumeration of Mosses detected in the Northern United States, which are not comprised in the manual of Asa Gray, M. D., some of which are new species.

By Thomas P. James, of Philadelphia.

Andræa Rothii Mohr, Fl. Crypt. Germ. t. 11. f. 7–8.

Hab. On rocks and the ground, White Mountains, New Hampshire.

Astomum subulatum Hampe, *Phascum subulatum*, Linn. Sp. Pl. p. 1570. Brid. 1. p. 37. Bryol : Europ. fasc 1. p. 15, tab. 7.

Hab. Old fields, Pennsylvania.

A. NERVOSUM Carl Müller, Syn. Musc. Frond. 1. p. 15. *Phascum nervosum,* Hook. Musc. exotic, vol. 2, tab. 105.
Hab. Dry sandy soil, New Jersey.

ACAULON TRIQUETRUM Bruch and Schimper, Bry. Europ. *Phascum triquetrum.* Spruce in London Journal, vol. 14, p. 189. *Ph. muticum,* Drum. Mus. Am. No. 8.
Hab. Bare grounds among the grass of old fields, Pennsylvania.

FISSIDENS TAXIFOLIUS Hedwig Sp. Musc. p. 155, t. 39. Brid. 2, p. 692. Bry. Europ. l. c. p. 9. t. 4.
Hab. Damp soils in woods, Pennsylvania and Delaware.

TETRAPLODON MNIOIDES Bry. Europ. l. c. p. 5. t. 2. *Splachnum mnioides,* Hdw. Mus. Frond. 2. p. 35, t. 11.
Hab. On decayed animal matter and horse manure, Mount Franklin, White Mountains, N. H.

TETRADONTIUM REPANDUM Schwæg. Bry. Europ. Fasc. 18. p. 4. t. 2. *Tetraphis repanda* Funk in Sturm, Fl. Germ. Crypt. P. 2. fasc. 17.
Hab. Damp shaded situations on the ground near "Glen House," Gorham, White Mountains, N. H.

CATHARINEA CRISPA n. sp. Dioica; caulis simplex longus erectus laxe foliosus; folia inferiora ovato-lanceolata, apicem versus majora, confertiora longa late-elongata, subundulata propre plana, emarginata, dentata, nervo subexcurrente, raro lamelloso, reticulata e cellulis laxis; perichætialia augustiora; siccitate involuto-crispa; seta rubra caulis longitudine; theca 1–3, brevis, cylindrico-ovalis curvata fusco-nigricans, operculo conico longe subulato recto.
Hab. Banks of small streams, New Jersey.

POLYTRICHUM BRACHYPHYLLUM Rich. in Michx. Fl. Amer. Bor. 2. p. 295. *Pogonatum brachyphyllum,* P. Beauv. Prodrom. p. 84. Brid. 2. p. 113.
Hab. Clayey banks near Woodbury, N. J.

BRYUM CRUDUM Schreb. Sp. Fl. Lip. p. 83. Bry. Europ. l. c. p. 37. t. 13. *Mnium crudum* Hedw. Mus. frond. 1. p. 99. t. 88.
Hab. On the ground shaded by shelving rocks, White Mountains, New Hampshire.

B. ELONGATUM Dicks. Fasc. 2. Pl. Crypt p. 8. Bry. Europ. l. c. p. 32.
Hab. In shaded situations, Crawford Notch, White Mountains, N. H.

DICRANUM FULVELLUM Smith, Fl. Brit. 3. p. 1209. Brid. 1. p. 813. *Arctoa fulvella.* Bry. Europ. Fasc. 33–36.
Hab. Moist situations, crevices of rocks, Mount Washington, White Mountains, N. H.

D. SPURIUM Hedw. Musc. Frond. 2. p. 32. t. 30. Bry. Europ. Fasc. 37–40. p. 41. t. 33. *D. condensatum,* Hedw. Sp. Musc. p. 139. t. 34.
Hab. On the ground in woods, New Jersey and Catskill, New York.

D. POLYCARPUM Ehrh. Dec. No. 84. Bry. Europ. Fasc. 37–40. p. 14. t. 2. *Oncophorus polycarpos,* Brid. 1. p. 397.
Hab. Moist situations, Mount Washington, N. H.

ENCALYPTA STREPTOCARPA Hed. Sp. Musc. p. 52. t. 10. Bridel 1. 144. Bry. Europ. 4. p. 15. t. 7.
Hab. On rocks, Lancaster county, Penn. Prof. Porter.

TRICHOSTOMUM RUBELLUM Rabenh. Deutch. Crypt. Bd. 2. p. 105. *Didymodon rubellus,* Bry. Europ. Fasc. 29–30. p. 3. t. 1. *Weissia recurvirostris,* Brid. 1. p. 317.
Hab. On the ground, Trenton Falls, New York.

T. CYLINDRICUM C. Müll. Syn. Musc. frond. 1. p. 586. *Didymodon cylindricus,* Bry. Europ. Fasc. 29–30. p. 5. t. 3. *D. tenuirostris,* Wilson in London Jour. Bot. 1841. p. 37
Hab. In damp situations, Chester Co., Penn.

BARBULA PAPILLOSA Wilson, London Jour. Bot. 1845 p. 192.
Hab. Common on Elm trees, Massachusetts, Buttonwood trees, New Jersey and Delaware.

B. TORTUOSA Weber & Morh. Bot. Taschb. p. 205. Brid. 1. p. 574. Bry. Europ. 13–15. p. 26. t. 13. ex parte.
Hab. On the ground, open woods, near Falls of Niagara.

B. MURALIS Hedw. Sp. Mus. p. 123, Bry. Europ. 13–15. p. 35. t. 20.
Hab. In dry situations, Lancaster County, Penn. Prof. Porter.

ZYGODON LAPPONICUS Bry. Europ. 4. p. 6. *Gymnostomum lapponicum*, Hedw. Musc. Fr. 3. p. 12. t. 5.
Hab. In fissures under shaded rocks, Pennsylvania, Catskill, N. Y., and White Mountains, N. H.

Z. MOUGEOTII Bry. Europ. 4. p. 7.
Hab. Similar situations.

GRIMMIA DONNIANA var. OBTUSA Smith Fl. Brit. p. 198.
Hab. In wet situations, Mount Washington, White Mountains, N. H.

G. LEUCOPHÆA Grev. Trans. Wer. Soc. 4. t. 6. Bry. Europ. 25–28. p. 28. t. 20.
Hab. On rocks, Andover, Mass., Pine barrens, New Jersey.

G. ACICULARIS C. Müll. Syn. Mus. frond. 1. p. 804. *Racomitrium aciculare*, Brid. 1. p. 219. Bry. Europ. 25–28. p. 5. t. 1.
Hab. On rocks in rivulets, Catskill, N. Y., White Mountains, N. H.

G. CANESCENS C. Müll. Syn. Mus. fr. 1. p. 807. *Racomitrium canescens*, Brid. 1. p. 208. Bry. Europ. 25–28. p. 12. t. 7–8.
Hab. Wet rocks near Wissahickon, Philadelphia, Penn.

PTEROGONIUM FILIFORME Hedw. St. Cr. 4. t. 7. Engl. Bot. t. 2297. Hooker & Taylor, Musc. Brit. p. 75. t. 24.
Hab. White Mountains, N. H.

NECKERA COMPLANATA Hüb. Musc. Germ. p. 576. Bry. Europ. Fasc. 41–45. *Leskea Omalia complanata*, Brid. 2. p. 327.
Hab. Under surfaces of dry rocks, Catskill, N. Y., and White Mountains, N. H.

DICHELYMA FALCATUM Myrin. in Act. Reg. Acad. Sc. Holm. 1852. p. 274. t. 6. Bry. Europ. Fasc. 16. p. 6. t. 1.
Hab. Head waters of the Saco river, White Mountains, N. H.

FONTINALIS DALECARLICA Bry. Europ. Fasc. Sup. c. t. 1.
Hab. In rivulets, common, White Mountains, N. H.

HYPNUM TRICHOMANOIDES Schreb. Sp. Fl. Lips. p. 88. *Neckera trichomanoides*. Hartm. Sk. Fl. Ed. 5. p. 338. *Leskea Omalia trichomanoides*, Brid. 2. p 329.
Hab. Under surfaces of dry rocks, Catskill, N. Y., and White Mountains, N.H.

H. DENTICULATUM Linn. Sp. Pl. p. 1588.
Hab. Dry situations near the Wissahickon, Philadelphia.

H. DEPRESSUM Bruch Ragensb. Bot. Zeit. 1824. *H. confertum* var. *depressum*, Brid. 2. p. 765.
Hab. On banks of the Schuylkill, Philadelphia.

H. ELEGANS Hooker Mus. Exotic. t. 9.
Hab. Near "Glen House," White Mountains, N. H.

H GRAMINICOLOR Brid. Sp. Mus. 2. p. 254. Drum. Mus. Am. No. 132.
Hab. Under dry rocks near Wissahickon, Philadelphia.

H. MUHLENBECKII Br. Sch. in litt. *H. Seligeri*, Sw. ex parte fide Schimper. *H. pulchellum*, Br. & Sch. in Drum. Musc. Am. and Jour. of Bot. 1843. 2. p. 668.
Hab. Near Wissahickon, Philadelphia, and White Mountains, N. H.

H. ——, n. sp. Cespites longissime fluitantes nigricanti-lutescentes et rufescentes, apice rubescentes et virentes expositi, nitidi; caulis decumbens, vage

ramosus; rami tenues flexuosi, ramulis tenuibus irregulariter depositis, apice arctuissime subpinnatis uncinatis; folia caulina dense imbricatula falcato-secunda, longe-lanceolata subulata e basi in acumen longum sensim attenuata planiuscula vel leviter undulata, margine integra, nervo crasso ante apicem evanido; foliis ramulosis subulatis longisetaceis falcatis, cellulis augustissimis linearibus, elongatis, pellucidis, lutescentibus, (Flor. et fruct. non visis.)
Hab. Submerged in "Ethan's pond," Willey Mountain, White Mountains, N. H.

H. PILIFERUM Schreb. Sp. Fl. Lips. p. 91.
Hab. On the banks of the Wissahickon, Philadelphia.

H. FLUVIATILE Swartz. Mus. Suec. p. 63. *H. Vallis Clausæ*, Bridel Sp. Musc. 2. p. 238.
Hab. Attached to rocks floating in brooks, Franklin County, Penn. Prof. Porter.

H. PALUSTRE Linn. Sp. pl. p. 1593. *H. luridum*, Sw. Mus. Suec. p. 58. Hedw. Musc. Fr. 4. p. 99. t. 38.
Hab. In rivulets, White Mountains.

H. OCHRACEUM Turner.
Hab. Wet situations, Pennsylvania, and White Mountains, N. H.

H. MONTANUM (Wils. Mss.) n. sp. Ab H. Halleri differt ramis elongatis erectis *foliis falcato-secundis*, minus acuminatis, areolatione densiore et opaciore.
Hab. On wet rocks in rivulets, White Mountains.

H. DIMORPHUM Brid. Sp. Musc. 2. p. 149.
Hab. On dry rocks in shaded wood, Ellis river, near "Glen House," White Mountains.

H. REFLEXUM Starcke in Web. & Mohr. Bot. Taschb. p. 306 and 476. Brid. 2. p. 461. Schwæg. Sup. 2. 1. p. 161 and 143. *H. tenax*, Drumm. Mus. Am. No. 225.
Hab. In woods on the ground, Massachusetts.

H. SUBTENUE n. s., dioicum; cespites latissime prostrati, dense intermixti firmi, lurido-virentissimi; caulis longe repens, tenuissimus filiformis rigidus radicans vage ramosus et pinnatus; ramis breviusculis flexuosis simplicibus et pinnatis longioribus iterum subpinnate ramulosis attenuatis; folia caulina laxe imbricata, ovato-deltoidea brevi-acuminata acumine subobliquo caviuscula serrulata, nervo crasso viridi ante apicem evanescente, cellulis laxiusculis pellucidis viridis: ramea ovata sublonge acuminata; perichætialia oblonge vaginantia erecta et squarrosa longe attenuata vel abrupte acuminata, apice summo subdenticulata, nervosa; seta flexuosa tuberculata rufa; theca ovato-globosa cernua et horizontalis subnigra, operculo conico breviter acuminato.
Hab. On rocks and trees near the base, Gorham, White Mountains, N. H.

H. ABIETINUM Linn. Sp. Pl. p. 1591. Hedw. Musc. Fr. 4. p. 84. t. 32.
Hab. Catskill Mountains, N. Y., and White Mountains, N. H.

H. SQUARROSUM Linn. Sp. Pl. p. 1693.
Hab. Woods, White Mountains, N. H.

Mr. Vaux, on behalf of a Committee appointed in 1852, to collect funds for enlarging and improving the Hall, read the following Report:—

The Committee, as constituted by the Academy, September 28, 1852, to solicit subscriptions for the purpose of enlarging and altering the Hall, beg leave to present the following Report:—

The amount originally estimated as requisite for the contemplated improvements was $6,500, which the Committee were soon enabled to announce to the Society had been obtained. But before a contract had been closed for the work, a great advance took place in the price of labor and materials. Other important alterations and additions also were proposed. A new estimate was then made, greatly exceeding the first. The Committee continued their labors, and they have now the pleasure to state in this, their final report, that their efforts were crowned with success, and that the whole amount required for carrying out the plan of the Building Committee, including the alterations referred to, and others also which became necessary during the progress of the work, has been subscribed, collected and paid over to the Treasurer.

The following are the names of the contributors, and the sums subscribed by each :—

Thomas B. Wilson,	$3,693	Robert Bridges,	50
Isaac Lea,	650	John Cooke,	50
J. Price Wetherill,	500	John Lambert,	50
William S. Wilson,	500	Thomas C. Percival,	50
A Subscriber,	500	William Camac,	50
James Dundas,	250	Charles Lennig,	50
George W. Carpenter,	250	Francis N. Buck,	50
Richard Wister,	250	Joseph Lea,	50
Edward Harris,	200	G. D. Rosengarten,	50
Joseph D. Brown,	150	A Subscriber,	50
George B. Wood,	150	Tobias Wagner,	50
Robert Pearsall,	100	G. W. Fahnestock,	50
Augustus E. Jessup,	100	John Jordan, Jr.,	50
Thomas D. Mütter,	100	John S. Phillips,	50
Charles D. Meigs,	100	John C. Cresson,	50
John K. Mitchell,	100	W. P. Hinds,	50
George Ord,	100	Robt. A. Caldcleugh,	50
Charles F. Beck,	100	J. Engle Negus,	50
Alex. W. Johnston,	100	J. V. Williamson,	50
E. J. Lewis,	100	Jos. S. Lovering,	50
John Grigg,	100	Frederick Graff,	50
William R. Lejee,	100	Joseph Leidy,	25
George A. McCall,	100	Thomas Fisher,	25
M. D. Lewis,	100	Chas. M. Wetherill,	25
Jacob G. Morris,	100	Francis W. Lewis,	25
Joseph Pancoast,	100	Joseph P. Smith,	25
John Le Conte,	100	Mifflin Wistar,	25
C. W. Pennock,	100	Samuel Ashmead,	25
Chas. Henry Fisher,	100	Jacob Gilliams,	25
Thomas T. Lea,	100	Paul B. Goddard,	25
Nathan Smedley,	100	Aubrey H. Smith,	25
J. Francis Fisher,	100	John B. Myers,	25
Robt. E. Peterson,	100	Isaac R. Davis,	25
Richard D. Wood,	100	Elias Durand,	25
Henry Seybert,	100	John S. Haines,	25
Caleb Jones,	100	Henry J. Boller,	25
John Bohlen,	100	Charles C. Cressson,	25
William Ashbridge,	100	Charles N. Bancker,	25
Wm. A. Blanchard,	100	Mrs. M. E. Ross,	25
A. Hart,	100	J. B. Lippincott,	25
Cornelius & Baker,	100	H. N. Burroughs,	25
Joseph Jeanes,	100	Edward Lowber,	25
William Bucknell,	100	John Farnum,	25
William S. Vaux,	100	Caleb Cope,	25
A. L. Heermann,	100		
Edgar L. Thomson,	100	Total	$12,218

Respectfully submitted by,

WM. S. ZANTZINGER,
WM. S. VAUX,
ROBERT BRIDGES,
GEO. W. CARPENTER,
} *Committee.*

Hall of the Acad. Nat. Sciences, December 25, 1855.

Mr. Vaux, on behalf of the Committee appointed January 25th, 1853, to superintend the enlargement of the Hall of the Academy, presented a final report, exhibiting the cost of the improvement, and its satisfactory completion.

The original estimated cost of the work, $6.500, was increased to $10,500, in consequence of an extension of the plan, and a great advance in the price of labor and materials. During the progress of the work, other alterations and additions, which could not be foreseen or provided for beforehand, were also determined on, at a cost of $1,763 above the contract, making the whole expense $12,263, all which had been received. A final settlement had been made with the contractor during the present month.

The Librarian read the following Report :—

REPORT OF THE LIBRARIAN FOR 1855.

Since the last Annual Meeting, in December, 1854, the additions to the Library consist of 233 volumes, 561 periodicals and serials, 70 pamphlets, and 9 maps, on the following subjects :

	Vols.	Period. and Serials.	Pamph.
Natural Sciences,	85	73	27
Anatomy and Physiology,	29	8	4
Journals, Trans., Memoirs, and Proceed. of Societies and Cyclopædias,	65	480	
Physical Science and Chemistry,	8		21
Voyages and Travels,	11		
History and Biography,	4		3
Antiquities and the Fine Arts,	14		
Miscellaneous,	17		8
Maps, 9			
	233	561	63

Making a total of 857 additions for 1855.

These have been derived from the following sources ; Authors 63 ; Editors 35 ; Societies, Corporations and Governments 313 ; Members and Correspondents 46 ; Dr. Wilson 410.

The inconveniences arising from insufficient accommodations for the books, which have been alluded to in previous reports, happily no longer exist. The collections which formerly occupied the room on the right of the George street entrance, have been removed to more appropriate places provided for them in the upper Hall, and this fine apartment has been tastefully fitted up during the past summer, and now forms part of the Library. It communicates directly with the adjoining rooms, comprises an area of about 1400 square feet, has a gallery extending round it, and is furnished with cases which occupy the walls, and which, it is estimated, will accommodate about 10,000 volumes.

There are now three distinct apartments occupied as a Library, all on the basement floor, well lighted, and comprising together an area of upwards of 2400 square feet. A new arrangement of the Books has been made, which, it is hoped, will afford increased facilities to those consulting them. The accommodations for them are now ample for any ordinary increase for many years.

A favorable opportunity has been afforded by this re-arrangement, for making another enumeration of volumes possessed by the Society. These have been found to number at this date over 15,000, distributed as follows :

	Volumes.
Natural Sciences, - - - - - - -	4767
Anatomy and Physiology, - - - - - -	605
Journals, Trans., Mem., &c., - - - - -	2973
Dictionaries of Arts and Sciences, - - - - -	570
Voyages and Travels, - - - - - -	1036
Antiquities and the Fine Arts, - - - - -	447
Historical Documents (estimated), - - - - -	1900
Chemistry and Physical Science, - - - - -	435
History and Geography, - - - - - -	593
Miscellaneous, - - - - - - -	1650
Maps in volumes, - - - - - - -	30
	15006

There is also a very large collection of tracts, periodicals, serials, &c., which, when bound into volumes, will doubtless swell the aggregate to 15500. The first enumeration was made in December 1850. At that date the number in the Library was 11,557, exclusive of 500 estimated volumes of tracts, &c. The increase therefore in five years, has been about 3500, or an average annual increase of nearly 700 volumes. By comparing the corresponding items in the two statements for 1850 and 1855, it will be found that a very large proportion of the whole increase is made up of works in the various departments of Natural Science, in Anatomy and Physiology, and in the Journals or Periodicals, viz., 1554 volumes on the Natural Sciences, 319 on Anatomy and Physiology, and 1029 Journals, or a total increase of upwards of 2900 volumes in these three most valued and most frequently consulted departments of the Library.

In conclusion, we may add, that during the present year, as in many others, the Library owes all that it has received to the relations the Academy has formed with other scientific bodies, or to the generosity and liberality of its friends and supporters.

Respectfully submitted by
WM. S. ZANTZINGER, Librarian.

December 25, 1855.

The Report of the Treasurer for 1855 was read and referred to the Auditors.

Dr. Leidy read the following Report:—

REPORT OF THE CURATORS FOR 1855.

Since the last annual Report of the Curators was presented to the Academy, the alterations and enlargement of the building, commenced in 1853, have been completed. The character of the alterations it is unnecessary to give in this place, as it is done in an especial report of the committee, which was appointed to superintend the changes, and it is proposed here, merely to give a general view of the present arrangement of the museum, now contained in two saloons; the one above the other.

The upper saloon of the museum is 110 feet long, 35 feet wide, and 34 feet high; and it has three ranges of galleries extending completely round. Two stairways communicate with this saloon, one on each side of the back or western third, and they ascend in the same position to the upper gallery. On the floor the side cases are brought out upon a line with the edge of the first gallery, leaving behind the cases, in advance and back of the stairways, four rooms, of which the two longer are appropriated to the entomological and oological cabinets, and the herbarium, and the others are appropriated to the services of the conchological and mineralogical committees.

All the upright or wall cases of the upper museum saloon, with the exception of four at the east end of the first gallery, numbering 169, are appropriated to the ornithological collection, now in process of arrangement by Dr. Wilson.

The middle of the floor is occupied with 48 large, horizontal cases, arranged in twelve double rows, and accommodating the conchological collection, now under arrangement.

The edge of the first and second galleries supports 62 horizontal cases, which with four upright ones at the east end of the first gallery, contain the collection of minerals, newly arranged by Messrs. Vaux and Ashmead.

The edge of the third gallery supports 27 horizontal cases, containing crustacea, and 13 cases of the same kind, containing echinodermata.

The lower museum saloon is of the same length and breadth as the upper one, but is 11 feet less in height; and it has two galleries extending entirely round, except at the east end of the first range. A stair case for the admission of the public, communicates with the hall in the south east corner, and in the same position ascends to the second gallery. At the back third of the same gallery, a stairway communicates with the saloon above; and on the opposite side a stairway ascends from the floor to the hall above, and communicates with the library rooms below.

The north-east corner of the lower museum saloon, on the floor and at the termination of the first gallery, is occupied by two small rooms, appropriated to the service of the mammalogical and herpetological committees.

At the back third of the saloon, on the third floor, the side wall cases are brought out on a line with the edge of the gallery, leaving behind the cases two small rooms, appropriated to the use of the committees on palæontology and ornithology.

In advance of the two rooms just mentioned, large glass cases extend nearly two-thirds the length of the saloon, for the accommodation of the larger mammalia and skeletons. The floor in the interspace of these cases, is occupied by three longitudinal double rows of partly horizontal and upright cases, 66 in number, appropriated to the collection of extinct invertebrata, and of geological specimens of rocks, yet unarranged.

In the east end of the saloon, there is one large, horizontal, transverse case, and three upright wall cases, containing large specimens of extinct vertebrate remains, the bulk of which collection, however, is now contained in three transverse double rows, of partly horizontal and upright cases, 18 in number, and in four wall cases to the north side of the latter, in the back third of the saloon. The four upright cases opposite to those just indicated, together with four others in the west end are appropriated to skeletons.

The wall cases on the northern side of the first gallery, 19 in number, accommodate the collection of reptiles, and the corresponding cases on the opposite side, 20 in number, contain the collection of human crania.

The edge of the first gallery supports 44 horizontal cases, containing the collection of extinct vegetable remains, arranged by Mr. W. F. Rogers.

In the upper gallery, in advance of the stairways, there are 30 wall cases and 12 long foot cases at the edge of the galleries, appropriated to the mammalogical collection; and back of the stairways there are 14 wall cases and 6 foot cases, to be appropriated to the collection of fishes.

On the two galleries at the west end, there are 8 vertical cases, and three others at the side of the first landing of the stairway, in the south east corner, to be used for the collection of sponges and corals.

The furnishing of the upper museum saloon and committee rooms, important alterations in the lower museum saloon, and the construction of new cases in the front basement room of the building, now appropriated to the use of the library, have been effected without cost to the Academy; the expense, amounting to $10,850, having been defrayed by our liberal fellow member, Dr. T. B. Wilson. In the alterations the old material was used wherever it could be done with advantage, so that they appear to be of greater magnitude than the expense would allow.

During the year just about closing, the donations to the different departments of the museum and the labors therein have been as follows :—

Mammals.—Of these animals there were presented 26 specimens of 18 species, among which were a reindeer from Greenland, presented by Col. G. A. McCall;

a second specimen of the same animal and two species of Phoca, presented by Dr. Wilson; and a third species of Phoca presented by Mr. Vaux.

Birds.—Mr. Guex presented 190 bird skins from Italy; and 24 specimens were presented by J. D. Sergeant, Dr. Heermann, Mr. Krider and others.

The oological collection has been removed from the position it formerly occupied, and has been rearranged by Dr. Heermann, in cabinets of drawers, constructed for the purpose, and now located together with the entomological collection in the north east room of the upper museum hall.

Reptiles.—Of these animals, several hundred specimens of about 40 species, have been presented by various members and others.

The collection of reptiles of the Academy, has recently been arranged by Dr. Hallowell, who has devoted much time to its study.

Fishes.—Drs. Ruschenberger and Turner, U. S. N., have presented 37 specimens of 26 species of fishes, from South America; Mr. Ashmead has presented 40 specimens of 24 species, from our coast; and Dr. Burtt, U. S. N., has presented a small collection from Madeira. Besides these, 28 specimens of 21 species have been presented by various members, and 41 specimens of 22 species have been received in exchange.

Mollusks.—Dr. Burtt, U. S. N., has contributed to the collection of the Academy 98 specimens of 34 species of shells, from various parts of the world; F. A. Sauvalle, Esq., has presented 50 specimens of 16 genera of terrestrial and fluviatile shells of Cuba; and various members have presented numerous specimens of 38 species, besides several small collections, in which the specimens were not enumerated.

Insects.—Mr. Guex has enriched our entomological collection by a contribution of 2300 specimens of about 1800 species of coleoptera from Italy, Russia, Siberia, Caucasus, Sitka, East Indies, and Australia. Mr. Andrew Murray of Edinboro presented 50 specimens of African coleoptera; and several members have contributed others in the various orders.

Crustaceans, arachnides, myriapods, annelides and zoophytes.—Of crustacea 34 species have been presented, chiefly by Mr. Ashmead. Of arachnides 3 have been presented; of myriapods 6; of annelides 20, among which is one of Eunice gigantea, from India, presented by Mr. Guillou; of echinoderms 12; of corals 4, among which is a fine specimen of Dendrophyllea ramea presented by Dr., Burtt, U. S. N., and one of the curious Hyalonema sieboldi, or glass-coral of Japan, presented by Capt. H. A. Adams, U. S. N.; and of sponges 4 species.

The collection of crustacea has been recently arranged to a considerable extent, by Dr. Bridges.

Comparative Anatomy. Of skulls of different animals 27 have been presented, of which 18 are from Dr. Heermann, and among the others is an ancient Mexican skull, presented by Dr. E. H. Barton of New Orleans, and the skull of a Japanese, presented by Dr. Liner, U. S. N. Of skeletons 4 small ones were presented, and of miscellaneous specimens 12.

The collection of human crania, now numbering 1006, has lately been completely arranged, classified, and catalogued by Dr. J. A. Meigs.

Botany. A collection of plants from Japan, consisting of several hundred specimens, was presented by Dr. Jos. Wilson, U. S. N.; a collection of ferns from Africa by Dr. Burtt; and a collection of 29 species marine algæ by Mr. Ashmead. There were also 24 other specimens, generally consisting of seeds and fruits presented by different members and others.

The herbarium of phanerogamous plants is now undergoing careful re-arrangement by Mr. E. Durand; and several of the members intend shortly to re-arrange the collection of cryptogamia.

Palæontology. A collection of fossils, consisting of 656 specimens of 280 species, from the coal measures, carboniferous limestone, devonian and silurian series of Great Britain and Ireland, was presented by Dr. T. B. Wilson; Prof. B. L. C. Wailes presented 38 species of shells and corals from the tertiary beds of Mississippi, being the original specimens described by Mr. Conrad; and small collections from different systems were presented by Dr. W. H. Hammond, U.

S. A.; Mr. Moore of Texas; J. Sampson of Indiana; and Dr. R. W. Gibbes of South Carolina. Nearly 200 specimens of fossils were presented from various localities, by different members and others. Among them is a fragment of wood weighing over 100 pounds from the drift of New Jersey, presented by Dr. Camac.

Mineralogy. Chas. M. Wheatley, Esq. presented 41 fine specimens of minerals, principally from Chester Co.; Dr. T. B. Wilson presented 218 specimens of European rocks; and Mr. W. S. Wilson presented a tablet containing 60 polished specimens of marbles of the Pyrenees. Besides the foregoing, 71 specimens of minerals were presented by various members and other persons.

The Museum of the Academy was re-opened to the public on the 1st of June, as usual on Tuesday and Friday afternoons, from one o'clock until sundown; and since its re-opening the number of visitors has exceeded 7000, or an average of over 1000 a month.

In concluding this report, the Curators would respectfully direct the attention of the Academy to the want of a greater number of efficient persons in various committees to aid in the arrangement of many of its departments, which now lie totally neglected.

JOSEPH LEIDY,
Chairman of the Curators.

On leave granted, Dr. Zantzinger presented for publication in the Proceedings the following paper, " An enumeration of Mosses detected in the Northern United States, which are not comprised in Gray's Manual, some of which are new species. By Thomas P. James, of Philadelphia." Referred to Dr. Zantzinger, Dr. Bridges and Mr. Durand.

The Society then proceeded to an election for officers for the ensuing year: with the following result:—

President, - - - - - -	GEORGE ORD.
Vice Presidents, - - - - - -	Robert Bridges, Isaac Lea.
Corresponding Secretary, - - - -	John L. Le Conte.
Recording Secretary - - - -	B. Howard Rand.
Librarian, - - - - - - -	Wm. S. Zantzinger.
Treasurer, - - - - - -	George W. Carpenter,
Curators, - - - - - - -	Joseph Leidy, William S. Vaux, Samuel Ashmead, John Cassin.
Auditors, - - - - - - - -	Robert Pearsall, Samuel Ashmead, William S. Vaux.
Publication Committee, - - - -	William S. Vaux, Robert Bridges, Isaac Lea, H. Cooper Hanson, Joseph Leidy.

ELECTION OF CORRESPONDENTS.

The following were elected *Correspondents* of the Academy :—

Lewis H. Steiner, M. D., of Baltimore.
Dr. George Suckley, U. S. A.